Lake San Marcos Estates

Final
Environmental Impact Report
GPA 99-02/R98-003/TM 5131
LOG NO. 98-08-021A
SCH # 2000011040

Prepared by:

HELIX
environmental planning, inc.

LAKE SAN MARCOS ESTATES
FINAL
ENVIRONMENTAL IMPACT REPORT

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SCH # 2000011040

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This Environmental Impact Report was certified by the

_____ on _____
(Decision-Making Body) (Date/Item Number)

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SUMMARY

Project Synopsis

Project Location

The proposed Lake San Marcos Estates Project (hereinafter referred to as Proposed Project) is located in an unincorporated "island" of the County of San Diego that is surrounded by the incorporated cities of San Marcos and Carlsbad. The project site is located south of State Route 78 (SR-78), east of Rancho Santa Fe Road, west of Lake San Marcos, and directly south of the terminus of Camino del Arroyo Drive. (Refer to Chapter 1.0 of the EIR for project location maps.)

Project Description

The project is a proposal for a residential development requiring a Tentative Map (5131), a General Plan Amendment (99-02) and a Rezone (98-003). A General Plan Amendment (GPA) is proposed to change the regional land use category for a portion of the site from Future Urban Development Area (FUDA) to Current Urban Development Area (CUDA), and the site-specific land use designation from Residential (1) to Residential (2). A rezone is also proposed for this project to modify the existing zoning from A70 (Limited Agriculture) and RR1 (Rural Residential) to RS1 (Single-family Residential).

The Proposed Project consists of a 105-unit residential development within a 126.1-acre parcel. The development includes 105 home sites, internal roadways, a swimming pool/spa facility and open space areas. The residences, roads and recreation facilities would comprise a total of 36.2 acres located in the northern portion of the property; the remaining 89.9 acres would consist of open space, most of which would be dedicated to the County in agricultural and biological open space easements.

Project Objectives

The overall objectives of the residential project are to:

- Develop the project site with approximately 105 residential dwelling units compatible with the scale and character of adjacent and nearby residential developments; and, develop the site at a lower density than the neighborhoods to the north and northeast to provide a reasonable transition between those neighborhoods and the open space to the south of the project site
- Retain a majority of the project site in its current condition, with producing avocado orchards and native habitat retained to help screen the homes from Lake San Marcos and soften distant views towards the site
- Provide on-site common use recreational facilities to reduce the demand on other Lake San Marcos Community Association facilities
- Develop a project at a density that is consistent with the County General Plan and North County Metropolitan Subregional Plan, while retaining a significant amount of open space for preservation and continued agricultural operations

Environmental Setting

Regional access to the site is provided by SR-78, San Marcos Boulevard/Palomar Airport Road, and Rancho Santa Fe Road. The project site is proposed to be accessed by Camino del Arroyo Drive, a two-lane residential collector street, which would transition to Camino del Arroyo Way within the proposed residential development. A secondary access is proposed for emergency vehicles only and would not be

accessible to residents for normal vehicle trips. The secondary access consists of a 25-foot easement located between the project property and Panorama Drive, east of Camino del Arroyo Drive.

The 126.1-acre project site is generally rectangular with an irregular shape on the eastern boundary where the site follows the contours of Lake San Marcos. The existing site is characterized by gentle to steeply sloping hillside terrain, with a majority of the site being actively farmed with avocado orchards. Approximately 67 percent of the site maintaining slopes between 15 and 50 percent grade. Slopes exceeding 50 percent are found primarily within the large canyon located in the northeast quadrant of the site and along the southeasterly edge of the property adjacent to the shoreline of Lake San Marcos. Elevations on site range between approximately 810 feet above mean sea level (MSL) on a knoll in the west-central portion of the site to 500 feet above MSL along portions of the eastern and southern site boundaries.

The site's vegetation predominantly consists of mature avocado trees, with a few interspersed citrus trees. In addition to the avocado and citrus trees, a swath of native coastal sage scrub habitat extends between the northern and southern property boundaries, and between the avocado orchards and Lake San Marcos, varying in width between 200 and 250 feet. Existing improvements on site consist of structures and equipment used in the agricultural operations, including two trailers, two small sheds/wooden structures, a carport and a small pump house. All of these facilities are located in the northwest corner of the site, in proximity to the existing dirt service/access road that originates from the terminus of Camino del Arroyo Drive. A few dirt roads cross the site providing access for farming equipment. A small picnic ground and boat dock (utilized by members of the Lake San Marcos Community Association) is located on the property's eastern boundary where the site abuts the Lake San Marcos shoreline.

The project site is located south, southwest of the developed Lake San Marcos residential community. Approximately 2,400 residences exist within this community that is generally bound by Rancho Santa Fe Road, San Marcos Boulevard and Discovery Street. The Lake San Marcos Community consists of single- and multi-family housing with primary amenities including an 18-hole golf course and Lake San Marcos. Land uses to the east include Lake San Marcos, a few scattered single-family homes on the east side of the lake, and undeveloped open space consisting of naturally vegetated steep slopes located within both the unincorporated County island and the City of San Marcos. Undeveloped open space abuts the southern property boundary, and a light industrial development is located to the south of the project site along Diamond Street and La Costa Meadows. Rolling hills of open space and scattered single-family residences are also found to the west of the project site.

Summary of Significant Effects and Mitigation Measures that Reduce the Significant Effects

The table (Table S-1) at the end of this section provides a summary of significant environmental impacts resulting from project implementation. A subchapter reference is provided in the table, referring to the detailed EIR analysis for each significant impact. Table S-1 also includes mitigation measures to reduce and/or avoid the environmental effects, with a conclusion as to whether the impact has been mitigated to below a level of significance. The detailed analyses are found in Chapter 2.0 of the EIR, with effects found not to be significant during preparation of the EIR and during preparation of the Initial Study found in Chapter 6.0. The mitigation measures listed in Table S-1 are also included at the end of the EIR in a List of Mitigation Measures and Environmental Design Considerations.

Project Alternatives

The alternatives evaluated in this chapter include the No Project/No Development Alternative; the No Project/Existing Plan Alternative, and the Low Density Alternative. The alternatives are evaluated in

detail in Chapter 4.0 of the EIR where they are compared to the environmental effects of the Proposed Project and are assessed relative to their ability to meet the basic objectives of the Proposed Project. Project alternatives were assessed in terms of their potential for reducing project-generated impacts, including: erosion, water quality, biological resources, short-term construction noise and landform alteration. In addition to the three alternatives addressed below, Chapter 4.0 discusses an Off-Site alternative which was rejected from further study.

No Project/No Development Alternative

Under the No Project/No Development Alternative, the project site would remain in its current condition as primarily that of an actively farmed avocado orchard. The 14.4 acres of native habitat between the avocado orchard and Lake San Marcos would remain, as would agricultural support facilities and service roads. The proposed residential development would not be constructed, including supporting infrastructure (i.e., roadways and utilities connections) and amenities (swimming pool/spa, ornamental landscaping).

The No Project/No Development Alternative would not meet two of the four basic Project objectives, including developing the site with residential dwelling units that are compatible with the adjacent community and developing the property in a manner that is consistent with adopted land use plans for this site. This alternative would meet two of the objectives, however, by retaining a majority of the project site in its current condition, with producing avocado orchards and native habitat. Over the near-term, this alternative would reduce project impacts associated with water quality and erosion, as well as landform alteration impacts. However, over the long-term, future development of the site with a reasonably expected project (i.e., consistent with the land use and zoning for the site) would result in some environmental impacts commensurate with the Proposed Project, as discussed in Chapter 2.0. This alternative would avoid near-term environmental impacts; however this alternative would not develop the site with General- and Subregional-planned residential uses, thereby not meeting the demand and current County-wide shortage of housing. This alternative is considered to be environmentally superior to the Proposed Project since it avoids all environmental impacts over the near-term. However, this alternative does not meet a majority of the project objectives, including fulfilling the existing land use plan goals of providing residential development on this site.

No Project/Existing Plan Alternative

The No Project/Existing Plan Alternative addresses a "No Project" alternative whereby the circumstance under which the project does not proceed is assessed, taking into account what would be reasonably expected to occur in the foreseeable future by others (e.g., in accordance with the General Plan and Subregional Plan). This analysis is in accordance with Section 15126.6(e) of the CEQA Guidelines, as discussed in Subchapter 4.2.

The project site has an existing General Plan land use designation of Residential-1 and an existing zoning designation of A70(8) and RR1. Based upon analysis of the current General Plan and zoning designations, it is estimated that up to 60 dwelling units would be allowable pursuant to current land use regulations. The existing zoning would permit approximately 5 dwelling units on the northern 42.5 acres of the site zoned A70, with the remaining 55 units located on the southern 83.6 acres within the RR1 zone. Similar to the Proposed Project, this Alternative would likely include the preservation of approximately 14 acres in a Biological Open Space Easement in order to preserve the Diegan Coastal Sage Scrub and retain a buffer between the proposed residential development and Lake San Marcos.

As this Alternative results in a residential development consisting of a little more than 50 percent of the number of units anticipated with Proposed Project, this Alternative is also considered a "reduced" development alternative.

The No Project/Existing Plan Alternative would not meet three of the four basic project objectives that propose inclusion of on-site recreational facilities (this would be infeasible due to the cost involved in extending infrastructure to the south end of the site) and retention of a majority of the site in open space with producing avocado orchards. Bifurcating the avocado orchard by the extension of the internal circulation system and residential development to the south would reduce the producing grove acreage and effectively reduce the farming viability of the site. It is unlikely that the small amount of remaining avocado orchard in the northeast corner of the site is viable. This alternative is expected to increase erosion, water quality and landform alteration impacts by distributing the development across the length of the site and into the southern portion where a majority of the slopes exceed 25 percent. This alternative would result in greater visual impacts than the Proposed Project by developing in the southern, more exposed portion of the site, impacting more slopes greater than 25 percent, and eliminating more of the avocado orchards in the south that act as a visual buffer and screening. This alternative would result in similar and slightly greater environmental impacts for some issues, and would meet only one of the basic project objectives. Although this alternative is expected to reduce biological resource (0.3 acre of coastal sage scrub) and short-term blasting noise impacts, these impacts were mitigated to below a level of significance for the Proposed Project and the additional reduction in impacts from this alternative is not considered to be substantial.

This alternative does not meet a majority of the basic Project objectives, results in greater impacts for some environmental issues, and does not result in a substantial reduction in Proposed Project impacts.

Low Density Alternative

The Low Density Alternative is an 80-unit residential development whereby the residential units would be constructed within the same general development footprint of the Proposed Project, but at a reduced density. Thus, this alternative would be reduce the overall site density of the development from 0.83 dwelling units per acre to approximately 0.63 dwelling units per acre. Within the 36.2-acre development area, the reduced density would result in a moderate increase in the amount of undeveloped/open space area. Under this scenario, the Low Density Alternative would require a General Plan Amendment (from Residential-1 to Residential-2) and a change in zoning from A70 and RR1 to RR2, as does the Proposed Project. Approximately 14 acres would likely be reserved in a Biological Open Space Easement, as with the Proposed Project.

The Low Density Alternative would meet all of the basic project objectives; however, this alternative is not expected to substantially reduce or avoid any of the environmental effects of the Proposed Project. This alternative would require the same mitigation measures recommended for the Proposed Project for the issues of erosion/sedimentation, water quality, biological resources, short-term noise and landform modification. According to CEQA Guidelines § 15126.6(a), alternatives should attain most of the basic objectives of the project but avoid or substantially lessen the significant effects of the project. The Low Density Alternative does not avoid or substantially lessen the significant environmental effects of the Proposed Project.

Areas of Controversy

Public comments were received on the previously-circulated Mitigated Negative Declaration (MND, discussed in Section 1.1.2 Background) for the Proposed Project, as well as on the NOP for this EIR. Comments received reflect concern and controversy over a number of environmental issues. The following environmental issues were raised in four letters commenting on the MND and three letters commenting on the NOP: (The MND is on file at the County of San Diego DPLU and the NOP comment letters are included in Appendix A to this EIR.)

- Land Use and Planning conflicts (annexation issues, community character impacts, long-term commitment to open space/biological resource easements)
- Growth Inducing impacts (extension of public facilities)
- Water Quality impacts
- Air Quality impacts (short- and long-term)
- Biological Resource impacts (direct, indirect and cumulative, NCCP compliance)
- Traffic impacts (cumulative impacts to Rancho Santa Fe Road and San Marcos Boulevard, traffic safety/intersection spacing)
- Fire Protection (access and annexation issue)
- Aesthetics and Landform Modification (grading on steep slopes, ridgeline impacts, removal of avocado groves, Hillside Development Policy compliance, RPO compliance, light and glare/dark skies)
- Agriculture impacts
- Noise impacts (short-term construction and long-term traffic)
- Cultural Resource impacts
- Recreational Resource impacts
- Public Utilities and Services (service availability, annexation issues, growth inducement)
- Range of alternatives to the Proposed Project

Each of the issues listed above is addressed in this EIR, in Chapters 2.0 through 6.0.

Issues to be Resolved by the Decision-Making Body

An EIR is an informational document that will inform the public agency decision makers and the public of the significant effects of a project, identify possibly ways to minimize the significant effects, and describe reasonable alternatives to the project. The lead agency (in this case the County of San Diego) must respond to each significant effect identified in this EIR by making findings for each significant effect. The issues to be resolved include the choice among alternatives and whether or how to mitigate the significant effects.

Table S-1
SUMMARY OF SIGNIFICANT EFFECTS AND MITIGATION MEASURES TO REDUCE THE EFFECTS

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.1 Geology (erosion)	Impact 2.1.3a Proposed project grading, excavation and construction activities would increase the potential for erosion and transport of material both within and downstream of the site. While proposed fill deposits would be recompacted to support project loading and would ultimately be stabilized (e.g., through paving or landscaping), erosion potential associated with fill deposits and graded areas would be higher in the short-term than for pre-construction conditions. Because of the proximity and/or sensitivity of receiving waters, the steep nature of local terrain, and the fact that the detailed project SWPPP has not yet been prepared, project construction as proposed could result in potentially significant short-term erosion and sedimentation impacts.	The project applicant will be responsible for the implementation, installation and, where applicable, removal of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential home owner's association (HOA). 1. Temporary desilting basins will be employed at the western and southern storm drain outlets during project grading and construction. The exact design and location of these basins will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP. The described basins will be removed by the project applicant after completion of project construction (including landscaping). 2. Permanent energy dissipation devices (e.g., riprap aprons) will be installed prior to project grading at all three proposed storm drain outlet points. The exact design and location of these devices will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP. 3. Runoff will be directed away from manufactured slope faces through the use of devices such as temporary berms, hay bales or sandbags placed along the slope tops. Alternatively, the potential use of permanent brow ditches (or similar devices) along slope tops will be evaluated in the project NPDES General Construction Activity Storm Water Permit SWPPP. Such devices, if deemed appropriate in the SWPPP, would provide both short-term (construction) and long-term runoff control for manufactured slopes.	Less than Significant

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.2 Water Resources	Impact 2.2.3c Residential urban development typically results in the generation of contaminants such as organic materials; nutrients; metals; petroleum compounds; sediment; pathogens; and chemical pesticides, herbicides and fertilizers. Post-development peak 100-year storm runoff from the site is projected to increase by approximately 6.5 percent over existing flows, with a corresponding increase in runoff loading potential. The transport of urban contaminants from the project site to downstream receiving waters could result in significant water quality impacts related to increased turbidity, oxygen depletion and toxicity to attendant species. These potential effects would be of most concern for Lake San Marcos and Batiquitos Lagoon. Despite the inclusion of design measures to reduce the amount of run-off exiting the site, additional mitigation is recommended to ensure the potential impacts to water quality are reduced to below a level of significance.	The project applicant will be responsible for the implementation and installation of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential homeowners' association (HOA). 1. Contaminant filtering devices shall be installed by the project applicant at appropriate storm drain inlets. The exact number, location and nature of these devices shall be determined by the project engineers as part of the project site drainage system design (and in conformance with NPDES municipal stormwater permit requirements). Specific filtering methods may include devices such as media filters, Fossil Filters™, Vortechs™ systems, and oil/water separators. The project drainage system design shall be submitted to the County for review and approval (pursuant to NPDES guidelines) prior to implementation. Long-term monitoring and maintenance of runoff filtering systems shall be the responsibility of the project site HOA. As part of this process, the HOA may elect to conduct regular water quality testing to assess the effectiveness of structural water quality measures. Based on the results of such testing, long-term requirements may potentially be modified to reduce or eliminate filtering devices, if warranted (i.e., if unfiltered runoff is of adequate quality). The ultimate determination of such long-term requirements would be made by the County and San Diego RWQCB, pursuant to NPDES municipal stormwater and urban runoff guidelines.	Less than Significant

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.2 Water Resources (cont.)	See above	2. The project applicant shall incorporate infiltration areas or devices into the project design where necessary and to the maximum extent practicable. Specifically, this may include efforts such as the use of unpaved swales in common areas, and porous pavement in applicable locations. The project applicant shall minimize all directly-connected impervious surfaces and reduce the use of impervious surfaces in project design wherever feasible. 3. The project site HOA shall fund and implement a program for public education regarding urban contaminant generation. Specific elements of this program may include items such as: adoption and distribution (e.g., through newsletters) of HOA guidelines regarding proper use and disposal of toxic and hazardous materials (e.g., paints, pesticides, herbicides, fertilizers and detergents); sponsorship of toxic and hazardous material collection programs; and use of signs and/or storm drain stencils to provide warnings on illegal contaminant disposal. 4. The project site HOA shall fund and implement a program to minimize the generation of urban contaminants from common landscaped areas. Specific elements of this program shall include: eliminating irrigation runoff; avoiding or minimizing the use of chemical pesticides, herbicides and fertilizers; and recycling vegetation waste.	See above

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.2 Water Resources (cont.)	See above	5. The project site HOA shall fund and implement a street sweeping program to maximize the removal of fine-grained particles. Specific elements of this program shall include the prohibition of on-street parking during cleaning hours, the use of low operating speeds (not exceeding 5 miles per hour) for street cleaning equipment, and proper scheduling of street sweeping activities (e.g., prior to commencement of the rainy season).	See above
Subchapter 2.3 Biological Resources	Impact 2.3.3a Raptors protected under the Migratory Bird Treaty Act could possibly nest within the avocado trees proposed for removal.	1. To prevent potential impacts to nesting raptors, a County–certified, qualified ornithologist, will perform a survey to be completed not more than one week prior to initiation of blasting, clearing and grading activities, and based on the survey, certify in writing to the County Department of Planning and Land Use that there are no nesting raptors on the project site. If the ornithologist's survey locates nesting raptors, it will certify in writing to the County that an area not less than 800 feet radius from the nest(s) has been flagged to identify a construction-free zone to avoid disturbance to nesting raptors.	Less than Significant
	Impact 2.3.3b The project would significantly impact coastal sage scrub habitat through direct loss of 0.3 acre.	1. NCCP guidelines determine the quality of habitat present and the 4(d) Rule Mitigation Guidelines for the HLP process determine the appropriate mitigation ratio. Following these guidelines, the Proposed Project warrants a 2:1 mitigation ratio for the coastal sage scrub on site. A Biological Open Space Easement, dedicated to the County of San Diego, will be placed on all areas of native vegetation outside the grading impact zone. The Biological Open Space Easement will cover 13.7 acres of habitat that will provide more than the required 2:1 mitigation ratio required for coastal sage scrub impacts and will preserve native habitat and protect any potentially occurring species listed in Tables 2.3-2 and 2.3-3 in the Draft EIR.	Less than Significant

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.3 Biological Resources (cont.)	Impact 2.3.3d Due to proximity of coastal sage scrub to the proposed residential development (on average approximately 300 feet away on the other side of retained avocado groves), the Proposed Project may result in indirect impacts to wildlife associated with the on-site retained sage scrub, as well as off-site resources such as those found in downstream surface waters.	1. During project construction, measures shall be implemented to control erosion, sedimentation, and pollution in accordance with the measures listed above for Impact 2.1.3a. The lack of wetlands or streambeds means no Clean Water Act 404 permits or Fish and Game Code 1603 Streambed Alteration Agreements are required for this proposed project. 2. The Proposed Project shall include fencing between the development/remaining orchard and the Open Space Easement. Preserved habitat shall be posted with signs precluding access due to habitat sensitivity and prohibiting dumping. Residents shall be educated in access restrictions, control of domestic animals, prevention of irrigation run-off, and sensitivity of habitats on site within the Biological Open Space Easement.	Less than Significant

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.3 Biological Resources (cont.)	See above	3. Prior to the start of grading, drilling and blasting activities, a certified biologist shall conduct a protocol survey within the native coastal sage scrub to determine if any nesting California gnatcatcher pairs are present. If nesting pairs are located within 500 feet of the proposed limits of grading (includes limits of drilling and blasting), one of the two following mitigation measures shall be implemented: – Construction activities (drilling, blasting or grading) shall be postponed until after the breeding season ends (breeding season is February 15 through August 15), or – Temporary noise barriers (earthen berms or solid fencing) shall be erected between the noise source and receiver to reduce the noise to a level that will not disturb nesting gnatcatchers (60 dB Leq). (Refer to Section 2.3.3d for the definition of dB Leq.) Although it is possible to screen activities and meet the 60 dB Leq standard, it is not possible to generalize a single berm requirement even for an at-grade assumption (i.e., without topographic variations). As noted in Appendix F, noise barrier heights would average 8½ feet. The location and height of the temporary barrier would depend upon the location of where breeding pairs of gnatcatchers are found and upon the distance between the construction noise source and the receiver (breeding pairs). The peak hourly noise level and required berm height to achieve the necessary mitigation are provided in Appendix F, page 9. Noise barrier materials would consist of either an earthen berm or plywood fencing, and would be located at the edge of the limits of grading for distances no greater than 200-300 linear feet. 4. Dust shall be controlled through the implementation of measures required by the County's grading regulations, including application of water on unpaved, unvegetated surfaces during construction activities.	See above

Table S-1 (cont.)

SUBCHAPTER/ ISSUE	POTENTIAL EFFECTS	MITIGATION MEASURES	LEVEL OF SIGNIFICANCE WITH MITIGATION
Subchapter 2.4 Noise	Impact 2.4.3a The Proposed Project will require localized blasting in areas with metavolcanic rock, during the grading phase. Because exact drill rig locations and barrier effectiveness is not known at present, the short-term noise generated from drilling activities (for placement of charges) may result in significant noise impacts to nearby sensitive receptors (residences to the north).	1. Drilling operations in preparation for blasting within 260 feet of the property line of a residential property shall be shielded through physical interruption in the direct line of sight from the source to the receiver. 2. A qualified acoustician shall monitor noise levels at the residential property line most affected by construction operations (i.e., along the northern project site boundary both west and east of Camino del Arroyo Drive). When a daily noise "dose" has been accumulated sufficient to equal 75 dB(A) $L_{eq}(8)$, drilling or construction operations shall be terminated for that day.	Less than Significant
Subchapter 2.5 Aesthetics and Landform Modification	Impact 2.5.3d Although manufactured slopes are proposed to be contour graded to blend and conform with existing landforms, the project proposes the construction of an approximately 116-foot fill slope within the large canyon in the northeastern portion of the project site, which exceeds the 15-foot height threshold of potential significance. The proposed fill slope is located within a large canyon that is visible only from a very limited vantage point on a privately owned lake. The fill slope would not be visible from public vantage points, or from residences within the Lake San Marcos Community. However, because the proposed fill slope exceeds the 15-foot threshold, it is considered a significant landform alteration impact.	1. The proposed fill slope in the canyon shall be graded to simulate the natural topography. The final grading plan shall be acceptable to the Director of DPLU. 2. Fill slope landscaping shall include a mix of native vegetation that conforms to the plant species found within the Biological Open Space Easement. A Revegetation Plan, acceptable to the Director of DPLU, shall be prepared for implementation.	Less than Significant

CHAPTER 1.0 – PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

1.1 Project Description and Location

1.1.1 Project Location

The proposed Lake San Marcos Estates Project (hereinafter referred to as Proposed Project) is located in an unincorporated "island" of the County of San Diego that is surrounded by the incorporated cities of San Marcos and Carlsbad. The project site is located south of State Route 78 (SR-78), east of Rancho Santa Fe Road, west of Lake San Marcos, and directly south of the terminus of Camino del Arroyo Drive. Refer to Figures 1.1-1 and 1.1-2 for the regional and vicinity location maps.

1.1.2 Background

A request for a General Plan Amendment (GPA) for the subject property was initiated on October 15, 1997 by submittal of a request for a Plan Amendment Authorization (PAA-97-002). The PAA was deemed approved by the County Department of Planning and Land Use (DPLU) in November of 1997. The complete project application package was submitted to the County in May 1998. Following the project application, supporting plans and documents were submitted to the County, including a General Plan Amendment Report (GPAR). Relative to environmental review, an Extended Initial Study and Draft Mitigated Negative Declaration (MND) were prepared and distributed by the County in January 2000 for a 30-day public review period, pursuant to California Environmental Quality Act (CEQA) Guidelines. The County received three letters with comments on the Draft MND. In April 2000, the County DPLU determined that an Environmental Impact Report (EIR) would be necessary based upon the comments received and the fair argument supported by evidence in the record that the project might have a significant adverse impact on the environment. On May 25, 2000, a Notice of Preparation (NOP) of an EIR was published in the *San Diego Union-Tribune* and distributed to the State Clearinghouse, responsible agencies and interested citizens and community groups. Four letters were received in response to the NOP. The issues raised in the NOP required the addition of three new issues beyond those issues identified in the County's NOP: Noise; Cultural Resources; and Fire Access and Safety. Appendix A includes the NOP in its entirety and its related comments.

1.1.3 Project Characteristics

The project is a proposal for a residential development requiring a Tentative Map (5131), a GPA (99-02) and a Rezone (98-003). A GPA is proposed to change the regional land use category for a portion of the site from Future Urban Development Area (FUDA) to Current Urban Development Area (CUDA), and the site-specific land use designation from Residential (1) to Residential (2). A rezone is also proposed for this project to modify the existing zoning from A70 (Limited Agriculture) and RR1 (Rural Residential) to RS1 (Single-family Residential). Refer to Figures 1.1-3 through 1.1-6 for the Tentative Map as well as existing and proposed land use and zoning categories.

The Proposed Project consists of 105 residential units within a 126.1-acre parcel. The development includes 105 home sites, internal roadways, a swimming pool/spa facility and open space areas. The residences, roads and recreation facilities would comprise a total of 36.2 acres located in the northern portion of the property; the remaining 89.9 acres would consist of open space, most of which would be dedicated to the County in agricultural and biological open space easements. A summary of the project is provided below and shown graphically in Figure 1.1-3. A detailed description of each project component is provided in the following text.

- Residential Units (Units 1 through 105)
- Common Area Roads
- Common Area, Landscaped Open Space Easement
- Common Area, Avocado Orchards/Open Space Easement and Biological Open Space Easement
- Common Area, Swimming Pool/Spa

Residences and Circulation

The Proposed Project includes the construction of 105 detached condominium units. The proposed residences will be one- and two-story structures, with the proposed architecture consisting of Spanish and Mediterranean styles to fit in with the surrounding communities. The primary access into the residential development would be an extension of Camino del Arroyo Drive. Camino del Arroyo Drive is a two-lane residential collector street between Rancho Santa Fe Road and the project site. The 40-foot wide paved roadway is proposed to continue south into the residential development (becoming Camino del Arroyo Way), providing direct access to home site driveways, as well as to several internal private drives. Residential development (including recreational uses, utilities and ornamental landscaping described below) and internal circulation improvements comprise 36.2 acres or 29 percent of the project site.

The Camino del Arroyo Way right-of-way is proposed to be 60 feet wide, consisting of a 40-foot wide paved road with curb and gutter and an additional 10 feet on either side of the roadway for pedestrian sidewalks and dry utility easements. The sidewalks are proposed to abut the curb and the additional five feet designated for utility easements would be landscaped. Refer to Figure 1.1-7 for private drive cross-sections. Internal circulation includes five drives ending in cul-de-sacs (Drives "A" though "E" on Figure 1.1-7) with pavement widths varying between 32 and 36 feet. These internal roads are also proposed to include an additional 10 feet on either side for sidewalks and landscaped utility easements. On-street parking would be permitted along both sides of Camino del Arroyo Way and private Drives "C," "D," and "E." Parking would be permitted on one side only for Drives "A" and "B."

"Emergency Only" access is proposed from the terminus of Panorama Drive with an access road crossing over to Drive "A" between Units 99 and 100 within a 25-foot sewer and emergency access easement (Figure 1.1-3). A locked gate (with knox box) is proposed at the property boundary, for use only by emergency vehicles only. No other vehicular access will be permitted. An option under consideration by the Project Applicant, but not required by the San Marcos Fire Department, is to include a strobe-activated gate at the emergency access from Panorama Drive.

While no significant traffic impacts were identified in Chapter 6.0 and Appendix J, the Project Applicant has agreed to voluntarily contribute to a "fair-share" contribution to the City of San Marcos for improvements to Rancho Santa Fe Road.

Recreational Facilities

Recreational resources for residents of the project include use of the facilities at Lake San Marcos as well as an on-site swimming pool and spa. The Proposed Project will be part of the Lake San Marcos Community Association (LSMCA), as designated in the property acquisition and purchase agreements. A landscaped recreational area is proposed near the entry gate from Camino del Arroyo Drive (Figures 1.1-3 and 1.1-8). The recreational area is approximately 13,000 s.f. (nearly 0.3 acre), located east of Camino del Arroyo Way and north of Drive "A" within the residential development. The recreational area will include a pool and spa, a small restroom structure, as well as pavement and perimeter landscaping (shrubs, turf, trees) within the fenced facility. The facility would be available only to residents of the Lake San Marcos Estates development.

Entry Gate/Landscaping/Design

Access into the proposed Lake San Marcos Estates residential development will be controlled by a gated entry which would include a keyless entry for residents and a call box for visitors, located in the roadway median of Camino del Arroyo Way. The entry gate will have a knox box and be strobe-activated for the San Marcos Fire District. The entry is proposed to include ornamental landscaping and an entry sign. (Figure 1.1-8).

Landscaping of common areas within the development is proposed to be limited to ornamental landscaping around the entry gate and pool/spa area, the "front yards" of proposed residential units, and ornamental landscaping of common manufactured slopes, such as those found along the north/northwesterly portion of the project and the fill slope south of the eastern end of private Drive "A." In addition, the project applicant shall implement a reseeding program in the canyons extending down from the proposed eastern and southern storm drain outlets. Specifically, this program shall entail seeding of native (coastal sage scrub) species to encourage additional long-term vegetation cover and associated sediment/contaminant filtering in the noted canyons. Specific direction for criteria such as appropriate species mix and seeding densities shall be obtained from a professional landscaping or habitat restoration company.

In an effort to minimize the potential for visual impacts, the Proposed Project includes the following two design features: (1) Avocado trees are proposed to be retained on slopes adjacent to house pads and as close as possible to the edges of the pads to provide shielding of the houses and to break up the flat contour of the building pad edges; and (2) Homes are proposed to be set back a minimum of 15 feet from the edges of the pads so that the slopes and the viewing angles work together to minimize the degree to which the homes are visible from lower elevations. In addition, all manufactured slopes are proposed to be vegetated and irrigated.

Open Space Easement/Avocado Orchards

Within the 126.1-acre site, approximately 76 acres are proposed to be retained for active avocado farming. The existing avocado orchards covering this portion of the site will remain. The on-going farming practice for these orchards includes harvesting fruit, removal and replacement of fungus-infected trees, re-vitalization of older trees and continued maintenance by the use of herbicides, County-permitted pesticides and irrigation. Avocado farming operations (maintenance and harvesting) are proposed to be managed remotely, whereby field crews would access the site as necessary and equipment and administrative support would be located off site at the business headquarters. No equipment staging areas or long-term facilities are proposed on site for these operations. Access to the orchards would be from Camino del Arroyo Way crossing between Units 59 and 60 to connect to existing dirt roads within the orchards.

The avocado farming area, along with the biological resources easement described below, are proposed to be retained in an open space easement (Figure 1.1-3). This approximately 90-acre Open Space/Agricultural Operations Easement is proposed to be dedicated to the County of San Diego as a permanent open space with restrictions of land use for open space or agriculture only. This easement is proposed to be retained in perpetuity by the County. (Refer to Appendix G of the EIR for the complete description of permitted and prohibited uses within this easement.)

Biological Open Space Easement

A total of 14.1 acres within the project site consists of native coastal sage scrub habitat, located between the avocado orchards/open space easement and Lake San Marcos (Figure 1.1-3). This area is proposed to be retained as a Biological Open Space Easement, also dedicated to the County of San Diego as permanent open space. (Refer to Appendix G of the EIR for a complete description of permitted and prohibited uses within this easement.)

Utilities

Sewer and potable water services would be provided by Vallecitos Water District (VWD). Potable water would be supplied to the site via an 8- to 10-inch water line routed from a new pump station located within the existing VWD water reservoir site located west of the project site (Figure 1.1-9). VWD currently maintains two above-ground water reservoirs, a 2.7 million gallon (mg) tank and a 1.3 mg tank. VWD has indicated that there is sufficient supply and capacity from the existing water reservoirs to serve the proposed 105 homes, the swimming pool/spa and common area landscaping. However, due to the project site elevation, a pump station is required to increase the water pressure between the reservoirs to the project site. A hydropneumatic pump station is proposed within the existing VWD tank site property boundary, northwest of the 1.3 mg reservoir (Figure 1.1-9). The pump station building is proposed to be approximately 25 feet wide, 35 feet long and 15 feet high and would house all of the equipment inside the building except for one steel pressure vessel that would be 5 feet in diameter and 8 feet long. The station would be constructed using cement block (split face) painted in a natural tone. The 8- to 10-inch water pipeline is proposed to follow existing VWD easements for most of the route to the project site. One segment of an existing 10-foot wide easement is proposed to be expanded to 20 feet and two segments would require that new 20-foot easements be established (Figure 1.1-9).

Sewer service for the proposed residential project would be provided by connection to an existing VWD sewer line located in Panorama Drive. New 8-inch sewer lines would be constructed throughout the site, crossing a 25-foot sewer easement between Units 99 and 100 to connect to the existing sewer stub in Panorama Drive.

Storm water runoff from the project site is proposed to be directed toward three stormdrain easements located on the west, south and east site boundaries (Figure 1.1-3). The majority of project-generated surface runoff would be directed to the east and would be collected within a proposed desilting basin located south of Unit 92. The desilting basin is proposed to have a capacity of approximately 0.73 acre-feet.

San Diego Gas & Electric would provide electric and gas service to the site via utilities and infrastructure located to the north within adjacent residential communities. These dry utilities are proposed to be distributed throughout the project site within the five-foot easements adjacent to the proposed sidewalks.

Grading and Construction Phase

The Proposed Project would require grading and improvements to a total of 36.2 acres on site. Earthwork is proposed to be balanced with an estimated 530,000 cubic yards (c.y.) of cut and 530,000 c.y. of fill. The project site is underlain by fractured metavolcanic rocks of the Jurassic-aged Santiago Peak Volcanics. Near surface and exposed rock outcrops would require localized blasting within the limits of grading. Blasting procedures would comply with Division 5 of Title 3 of the San Diego County Code of Regulatory Ordinances Relating to Blasting Operations, as amended (Ordinance 7821, September 1990). Fractured rock from blasting operations would be retained on site, and disposed of in- on-site fills within

a canyon in the northeast quadrant of the site. No export of rock is proposed. Grading is proposed to be consolidated in the flatter, northwestern portion of the site, thus avoiding a majority of the site's slopes that exceed 25 percent gradient. Both cuts and fills are proposed, with fill proposed primarily in the north/northwestern portion of the project development area and within a portion of the large canyon located in the northeast quadrant of the site. Manufactured slopes are proposed in the northwestern and southwestern segments of the grading limits, and contour grading is proposed on the north, east, and west-facing slopes to blend the project with the natural contours. The maximum height of manufactured slopes would be 115 feet and slope gradients are proposed at a maximum ratio of 2:1. The steepest manufactured slopes are proposed south of Units 87-92.

This project is proposed to be graded in one phase, over a six-month period, with grading activities limited to a maximum area of 13 acres on any given day due to the hilly nature of the site. Construction equipment, including such vehicles as scrapers, dozers and loaders, are described in Subchapter 2.4 (Noise) and listed in Appendix I (Air Quality Study). The numbers and types of equipment are based on a daily work area of less than 15 acres. Home construction is proposed to occur in roughly eight phases over a period of 24 months, following construction and installation of roads and infrastructure. Approximately 13 homes would be constructed per phase, which is approximately each quarter. Model homes, located on Units 93-98, would be constructed first, followed by phase one which is projected to include the recreational area, Units 83 and 84, and Units 1-11. Model homes and phase one are located in the northeast and northwest corners of the site, respectively. Phases two through seven would continue south, with phase eight located in the north between Camino del Arroyo Way and the model homes.

Construction vehicles would access the site via Camino del Arroyo Drive. The proposed staging area is located in the approximate location of residential Units 70-75, located 900 feet south of the project entrance.

Standard measures are proposed during the grading and construction phase to reduce environmental effects and impacts to air quality, erosion and water quality. These environmental design considerations listed below are also included in a list at the end of the EIR, along with mitigation measures recommended in Chapter 2.0. The environmental design measures proposed as part of the project description include the following activities:

- Multiple applications of water during grading between dozer/scraper passes
- Paving, chip sealing or chemical stabilization of internal roadways after completion of grading
- Use of sweepers or water trucks to remove "track-out" at any point of public street access
- Termination of grading if winds exceed 25 mph
- Stabilization of dirt storage piles by chemical binders, tarps, fencing or other erosion control

1.2 Project Objectives

The overall objectives of the residential project are to:

- Develop the project site with approximately 105 residential dwelling units compatible with the scale and character of adjacent and nearby residential developments; and, develop the site at a lower density than the neighborhoods to the north and northeast to provide a reasonable transition between those neighborhoods and the open space to the south of the project site

- Retain a majority of the project site in its current condition, with producing avocado orchards and native habitat retained to help screen the homes from Lake San Marcos and soften distant views towards the site

- Provide on-site common use recreational facilities to reduce the demand on other Lake San Marcos Community Association facilities

- Develop a project at a density that is consistent with the County General Plan and North County Metropolitan Subregional Plan, while retaining a significant amount of open space for preservation and continued agricultural operations

1.3 Intended Uses of the EIR

This EIR is an informational document which has been prepared to (1) inform public agency decision-makers and the public of the potential for significant environmental impacts as a result of project implementation; (2) identify mitigation measures that will reduce project impacts; and (3) identify alternatives that will reduce or avoid potentially significant impacts. The decision-makers will consider the information in this EIR, along with social and economic information presented to the County before taking action on the Proposed Project. This EIR may constitute substantial evidence in the record to support the agency's action on the project.

For each significant impact identified in the EIR, the agency must make findings, and if appropriate, prepare a statement of overriding considerations if mitigation presented does not reduce impacts to below a level of significance. The County of San Diego is the lead agency for the project under CEQA. Responsible agencies, identified in the matrix in the following section, will use this EIR in their discretionary approval processes involving issuance of the required permits.

1.3.1 Matrix of Project Approvals and Permits

This environmental analysis has been prepared to support the discretionary actions and approvals necessary for implementation of the proposed Lake San Marcos Estates Project. The Proposed Project will require the following approvals and permits:

Discretionary Approval/Permit	Agency	Status
General Plan Amendment 99-02 Rezone 98-003 Tentative Map 5131 NCCP 4(d) Findings/Habitat Loss Permit Grading Permit Execution of Irrevocable Offer to Dedicate ROW	County of San Diego	Lead Agency
Habitat Loss Permit	California Department of Fish and Game and U.S. Fish & Wildlife Service	Responsible Agency
NPDES General Construction Activity Storm Water Permit, including the SWPPP	Regional Water Quality Control Board	Responsible Agency
Annexation into the ~~to~~ San Marcos Fire District's Community Facilities District	~~Local Agency Formation Commission~~ San Marcos Fire District	Responsible Agency
Annexation into the ~~to~~ Vallecitos Water District's Sewer Improvement Districts 1, 2 and 6 (sewer and water)	~~Local Agency Formation Commission~~ Vallecitos Water District	Responsible Agency

1.4 Environmental Setting

Site Access

Regional access to the site is provided by SR-78, San Marcos Boulevard/Palomar Airport Road, and Rancho Santa Fe Road. Local access to the site is provided via Camino del Arroyo Drive which intersects with Rancho Santa Fe Drive at a signalized intersection. (Refer to Figures 1.1-1 and 1.1-2 for regional and local access to the site.) There is currently no other direct vehicle access to the site. Private drives and dirt roads are present to the west, south and east; however, these roads do not provide direct, paved vehicle access from the local circulation system.

The project site is proposed to be accessed by Camino del Arroyo Drive, a two-lane residential collector street, which would transition to Camino del Arroyo Way within the proposed residential development. Camino del Arroyo Drive/Way would be the primary access to the site for vehicles entering or exiting the project site. A secondary access is proposed for emergency vehicles only and would not be accessible to residents for normal vehicle trips. The secondary access consists of a 25-foot easement located between Units 99 and 100, connecting to Panorama Drive. As discussed under Section 1.1.3, a locked (knox box) gate would be installed for use by emergency vehicles only.

Site Characteristics

The 126.1-acre project site is generally rectangular with an irregular shape on the eastern boundary where the site follows the contours of Lake San Marcos. The existing site is characterized by gentle to steeply sloping hillside terrain, with a majority of the site being actively farmed with avocado orchards. (Refer to Figure 1.1-10 for an aerial photograph of the project site, immediately surrounding properties and the lake.) A majority of the site consists of moderate- to steep-sided slopes, with approximately 67 percent of the site maintaining slopes between 15 and 50 percent grade. The majority of these slopes have been substantially disturbed by years of avocado farming and other agricultural activities. Using the County of San Diego slope classification standards, the topography on site is divided into the following classifications: approximately 21 percent lies within the 0 to 15 percent category; 24 percent lies within the 15 to 25 percent category; 42 percent lies within the 25 to 50 percent category; and 12 percent exceeds 50 percent slope. Slopes exceeding 50 percent are found primarily within the large canyon located in the northeast quadrant of the site and along the southeasterly edge of the property adjacent to the shoreline of Lake San Marcos. Elevations on site range between approximately 810 feet above mean sea level (MSL) on a knoll in the west-central portion of the site to 500 feet above MSL along portions of the eastern and southern site boundaries. (Refer to Figures 1.1-11 and 1.1-12 for a topographic map and slope analysis map, respectively.)

The site's vegetation predominantly consists of mature avocado trees, with a few interspersed citrus trees. Some of the avocado trees located in the southern portion of the site are being replaced with fungus-resistant species or have been pruned substantially to promote rejuvenation (Figure 1.1-10). Approximately 500 to 600 trees are afflicted with what is commonly called "root rot" and will be removed and replaced with fungus-resistant varieties. Approximately 500 additional trees have recently been pruned to a height of about 3 feet for rejuvenation. In addition to the avocado and citrus trees, a swath of native coastal sage scrub habitat extends between the northern and southern property boundaries, and between the avocado orchards and Lake San Marcos, varying in width between 200 and 250 feet (Figure 1.1-10).

Improvements on site consist of structures and equipment used in the agricultural operations. Existing structures include two trailers, two small sheds/wooden structures, a carport and a small pump house. All of these facilities are located in the northwest corner of the site, in proximity to the existing dirt

service/access road that originates from the terminus of Camino del Arroyo Drive. A few dirt roads cross the site providing access for farming equipment. (Refer to Figure 1.1-13a for existing site photographs.) A small picnic ground and boat dock is located on the property's eastern boundary where the site abuts the Lake San Marcos shoreline. This picnic area and dock are utilized by members of the LSMCA. Other improvements that are less visible include irrigation supply lines to the orchards and a small honeybee farm located in the midst of the avocado groves.

Surrounding Land Uses

The project site is located south, southwest of the developed Lake San Marcos residential community. Approximately 2,400 residences exist within this community that is generally bound by Rancho Santa Fe Road, San Marcos Boulevard and Discovery Street. The Lake San Marcos Community consists of single- and multi-family housing with primary amenities including an 18-hole golf course and Lake San Marcos. Existing single-family residences within this community are located directly north of the project site. (Refer to Figure 1.1-13b for a photograph of the neighboring community taken from the subject property.)

Land uses to the east include Lake San Marcos, a few scattered single-family homes on the east side of the lake, and undeveloped open space consisting of naturally vegetated steep slopes located within both the unincorporated County island and the City of San Marcos. Lake San Marcos generally terminates near the project's southeast corner, where the southern leg of San Marcos Creek begins and continues southerly. Undeveloped open space abuts the southern property boundary, and continues on both sides of San Marcos Creek. A light industrial development is located to the south of the project site along Diamond Street and La Costa Meadows. Rolling hills of open space and scattered single-family residences are also found to the west of the project site between the project's western property boundary and Rancho Santa Fe Road. (Refer to Figure 1.1-13b for a photograph of the western property boundary taken from an adjacent rural residential street.) The Vallecitos Water District maintains property on a knoll to the west of the project, where two existing above-ground water reservoirs are situated (Figure 1.1-10).

1.4.1 Consistency With Applicable Regional and General Plans

County of San Diego General Plan

The Lake San Marcos Estates Project proposes a GPA to change the regional land use category on one-half of the project site from FUDA to CUDA so that the entire site falls into the CUDA category. Secondly, a GPA is proposed to change the site specific land use designation from Residential (1) to Residential (2) which permits a development density of one residential unit per one acre, in place of the existing density of one residential unit per one, two or four acres. (Refer to Figures 1.1-4 and 1.1-5.) While the Proposed Project includes a GPA, the proposed land use type and intensity is consistent with the intent of development for this site as noted in the applicable goals and policies. Section 1.6.1, Land Use and Planning/Community Character, includes a more detailed discussion relative to the GPA and applicable goals and policies.

North County Metropolitan Subregional Plan

The Proposed Project is located within the North County Metropolitan Subregion, as well as the City of San Marcos Sphere of Influence. The Subregional Plan contains policies that require the County to cooperate in the planning and regulating of growth of unincorporated lands located within the sphere of influence of neighboring incorporated cities (Land Use Policy #1). The City of San Marcos desires to annex the project site into their Lake San Marcos Neighborhood so that they may apply their development standards and policies relative to community identity and visual intrusion of development into hillsides.

Each objective and policy within the City's Lake San Marcos Neighborhood Plan Element is discussed in detail in Section 6.1.1 Land Use and Planning/Community Character and 2.5 Aesthetics and Landform Modification.

Zoning Ordinance

The Proposed Project includes a request for a Rezone to accompany the requested GPA. The project site is currently zoned with two designations, A-70 (Limited Agriculture) for the 42.5-acre northern portion of the site and R-R-1 (Rural Residential) for the 83.6-acre southern portion of the site (Figure 1.1-6). In order to be consistent with the proposed regional and site-specific land use designations of CUDA and Residential (2), respectively, a rezone for the entire site to R-S-1 is proposed. The R-S-1 zone designation permits single-family residential development at a density of one dwelling unit per acre, which is consistent with the General Plan designation of Residential (2).

County of San Diego Resource Protection Ordinance

The County of San Diego Resource Protection Ordinance (RPO), effective October 10, 1991, provides development controls for resources within the County deemed to be fragile, irreplaceable and vital to the general welfare of residents. The resources protected by the County include certain types of wetlands, floodplains, steep slopes, sensitive biological habitats and prehistoric and historic sites. The RPO requires that prior to approval of Tentative Maps or Major Use Permits for properties with protected resources, a Resource Protection Study must be completed and findings must be made relative to compliance with the provisions of RPO. The resources protected by RPO on the project site include steep slopes and biological habitat. The RPO defines steep slope lands as "all lands having a slope with natural gradient of twenty-five percent or greater and a minimum rise of fifty feet, unless said land has been substantially disturbed by previous legal grading." The slope analysis performed for the subject property shows that 42 percent of the project site lies within the 25 to 50 percent category and 12 percent of the site exceeds 50 percent slope. The RPO allows encroachment into steep slopes based upon the percentage of the lot containing said steep slopes. Based upon the formula contained within RPO, the subject development is allowed a maximum encroachment of up to 10 percent of the area in steep slope lands. The proposed residential project would encroach into approximately 8.9 percent of the steep slopes within the property boundaries, thus meeting the County's RPO encroachment allowance.

Relative to biological resources, the RPO defines coastal sage scrub as "Sensitive Habitat Lands." Approximately 14 acres on site consist of coastal sage scrub habitat and must comply with the provisions of RPO for impacts to sensitive habitat lands.

Regional Air Quality Plans and Strategies

The Proposed Project is consistent with the applicable regional plans for air quality. Specifically, the Proposed Project is consistent with the Regional Air Quality Strategy (RAQS) and the State Implementation Plan (SIP), which were based upon San Diego Association of Governments (SANDAG) Series 8 growth forecasts. The Series 8 growth forecasts were based upon general plans, including the County of San Diego General Plan. The Proposed Project includes a General Plan Amendment (GPA) and would result in an increase in 60 dwelling units above what was envisioned in the existing General Plan, and likewise in the Series 8 forecasts. Due to the proposed GPA, additional consideration is given to project consistency with regional air quality plans. Air quality is primarily a regional or basin-wide issue and a project would be inconsistent with the RAQS and SIP if it measurably impedes attainment of clean air standards, even if the measured increment is small. The County of San Diego recommends that any project that creates 55 pounds per day of ozone precursors should be considered to have an individually significant impact. (The 55 lb./day threshold is from the South Coast Air Quality Management District "CEQA Air Quality Handbook.") A typical single-family household generates a little less than 0.2 pounds per day of vehicular emissions

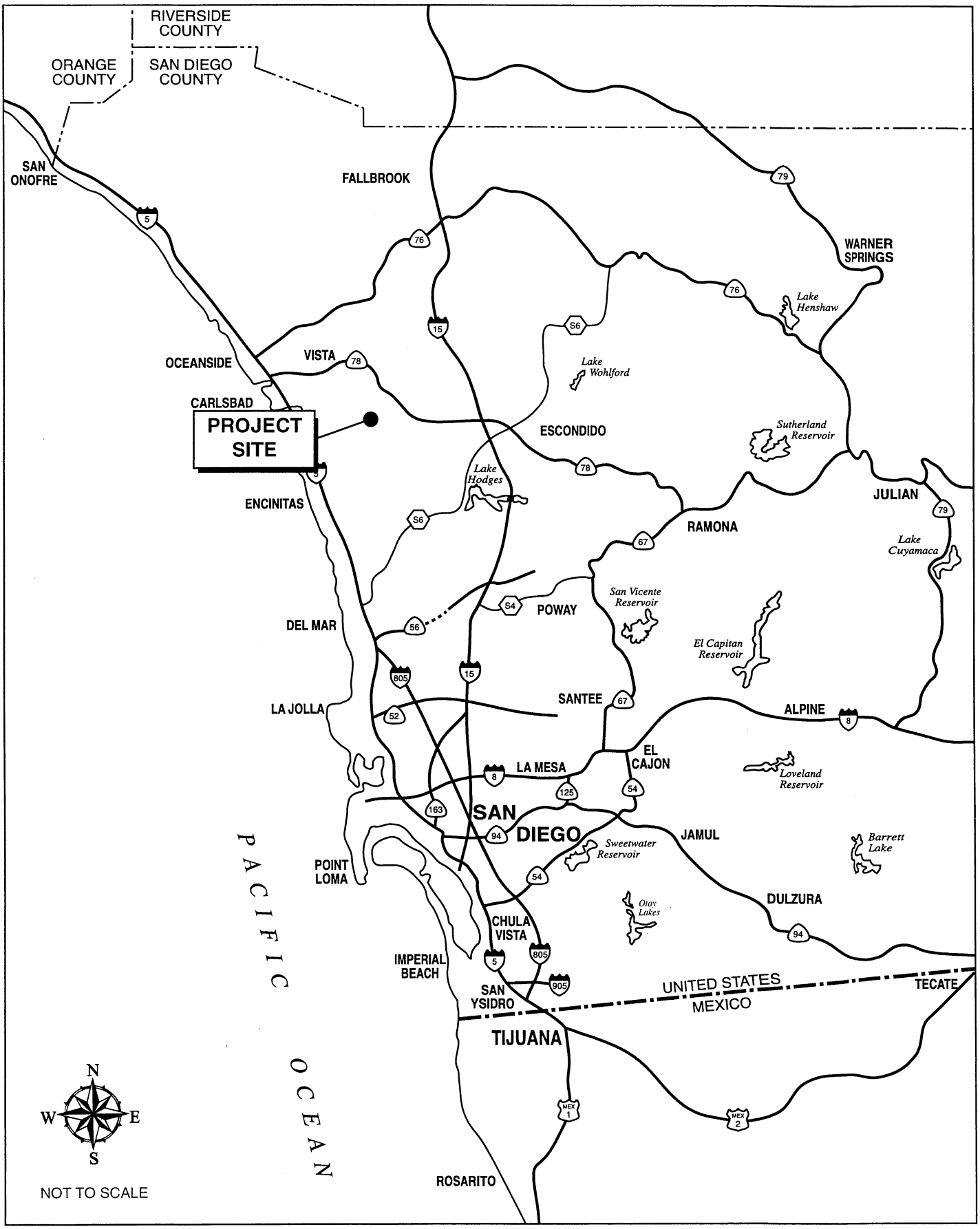
contributing to regional smog formation. Sixty homes (the increase as a result of the proposed GPA) would cause an increase of approximately 10 pounds per day, or less than 20 percent of what would constitute an individually significant project. With the continued emissions reductions from a cleaner future vehicle fleet, that percentage is anticipated to reduce further. The projected emissions from the additional 60 dwelling units (less than 20 percent of the threshold) is a de minimis deviation from the adopted growth projections. Thus, the Proposed Project is consistent with the regional air quality plans noted above.

Regional Water Quality Control Board (RWQCB) Basin Plan

The Proposed Project is subject to applicable elements of the federal Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES). Specific NPDES requirements include obtaining a General Construction Activity Storm Water Permit (NPDES No. CAS000002) and (if applicable) a Dewatering Waste Discharge Permit (NPDES No. CA0108707), as well as conformance with NPDES municipal storm water and urban runoff guidelines (NPDES No. CA0108758). Construction activity permits are required for applicable sites where grading exceeds five acres, and are issued by the State Water Resources Control Board (SWRCB) under an agreement with the U.S. Environmental Protection Agency (EPA). Specific conformance requirements include implementing an approved Storm Water Pollution Prevention Plan (SWPPP) and monitoring program, with pollution control measures involving the use of best available technology (BAT), best conventional pollutant control technology (BCT), and/or best management practices (BMPs) pursuant to direction by the SWRCB and applicable RWQCB office. Additional discussion of permit and SWPPP requirements is provided in Subchapter 2.2, Water Resources.

For the management of storm water, local agencies in the San Diego region (including the County of San Diego) must comply with NPDES guidelines for storm water and urban runoff, with these guidelines implemented by the San Diego RWQCB through Order No. 2001-01. Specifically, this order requires new development (and redevelopment projects) to meet (among other criteria) a number of numeric and qualitative standards related to water quality and runoff discharge. Specifically, these include: (1) use of volume- or flow-based structural BMPs to mitigate (i.e., infiltrate, filter or treat) runoff from a design storm event or intensity; and (2) reduction of post-development runoff containing pollutant loads which cause or contribute to an exceedance of receiving water quality objectives to the maximum extent practicable. The noted requirements also mandate co-permittees (i.e., the County of San Diego) to implement an Urban Runoff Management Program, including efforts such as development review, source control, public education and monitoring/maintenance.

In addition to the NPDES requirements, the San Diego Basin Plan establishes a number of beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are generally defined in the Basin Plan as "the uses of water necessary for the survival or well being of man, plus plants and wildlife." Water quality objectives identified in the Basin Plan are based on established beneficial uses, and are defined as "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses." Water quality objectives are thus derived from beneficial uses, which are based on the ability of given water sources (in terms of water quality) to safely accommodate specific uses. Water quality objectives and project compliance with the Basin Plan are discussed in detail in Subchapter 2.2, Water Resources.

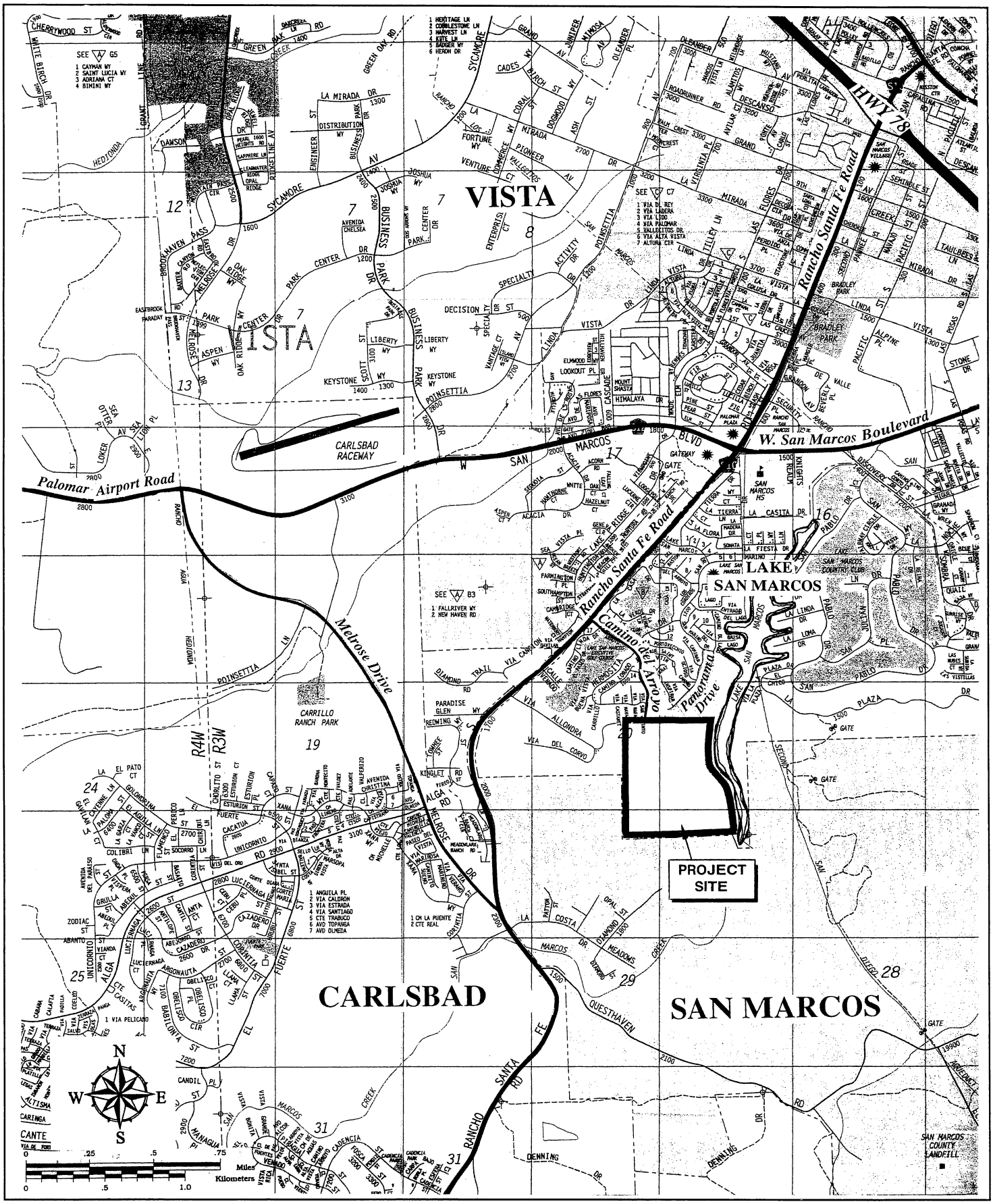


Regional Location Map

LAKE SAN MARCOS ESTATES

Figure 1.1-1

HELIX

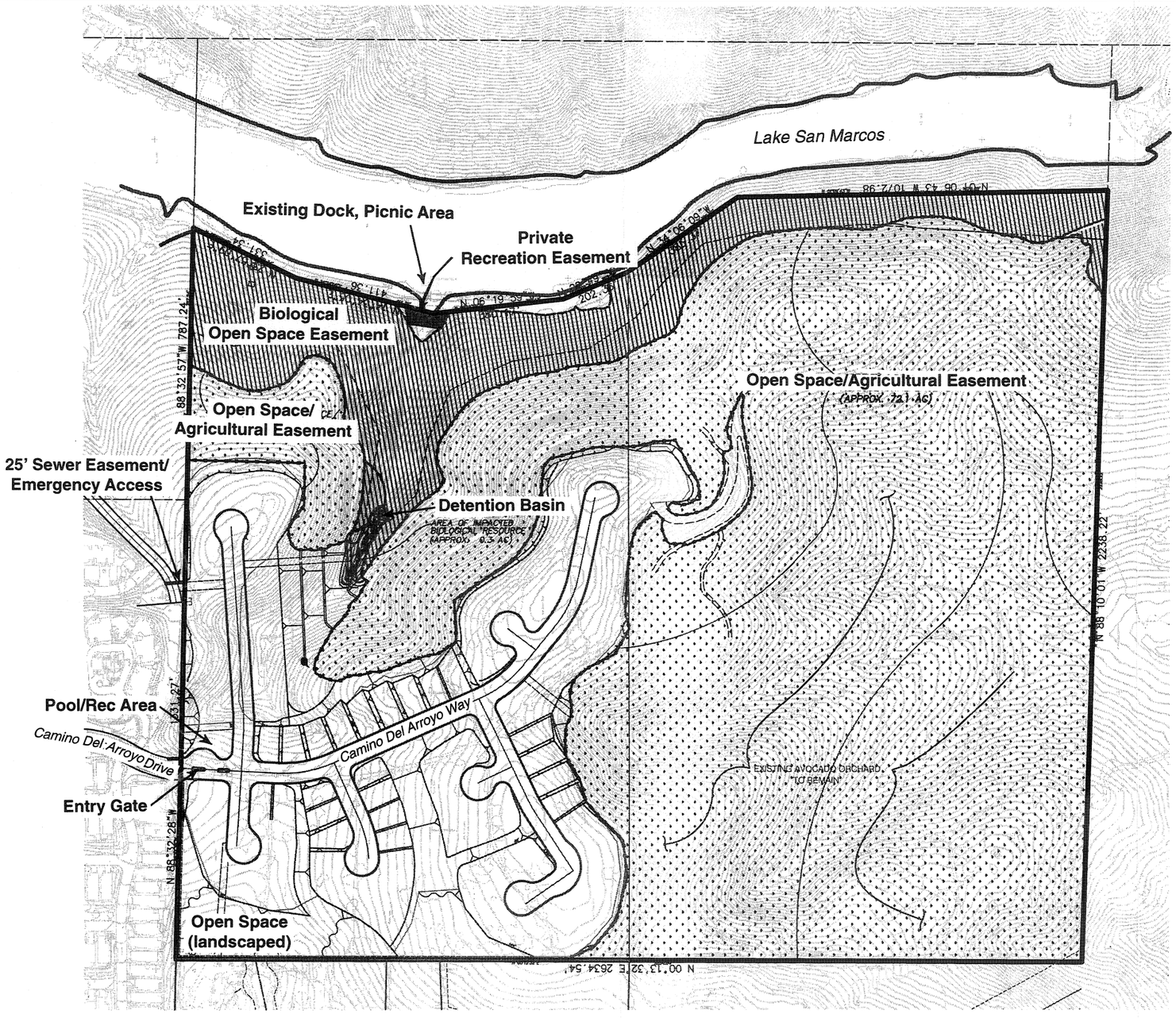


Project Vicinity Map

LAKE SAN MARCOS ESTATES

Figure 1.1-2

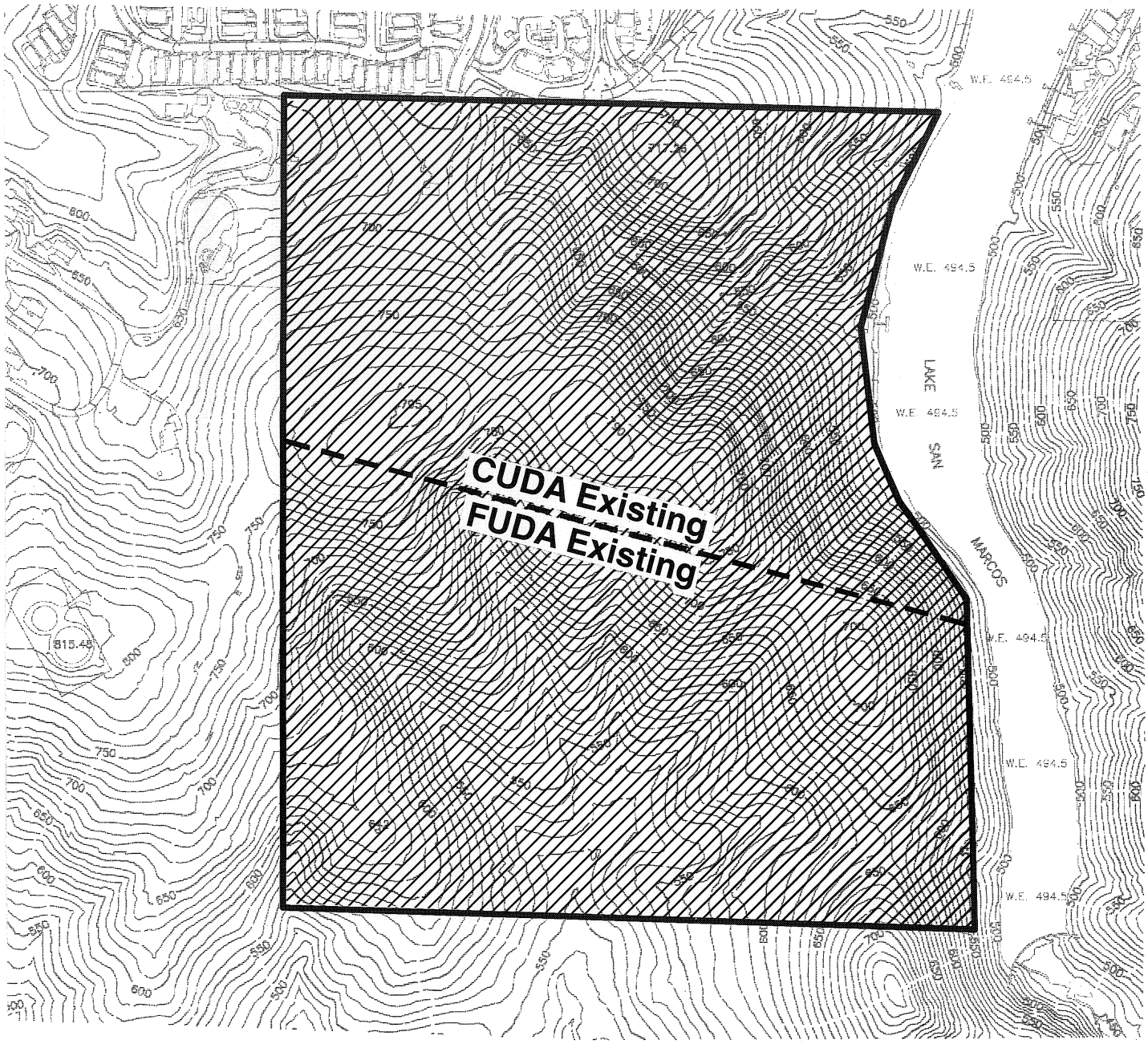
HELIX



Source: Hunsaker & Associates, April 2001

Tentative Map
LAKE SAN MARCOS ESTATES
Figure 1.1-3

HELIX



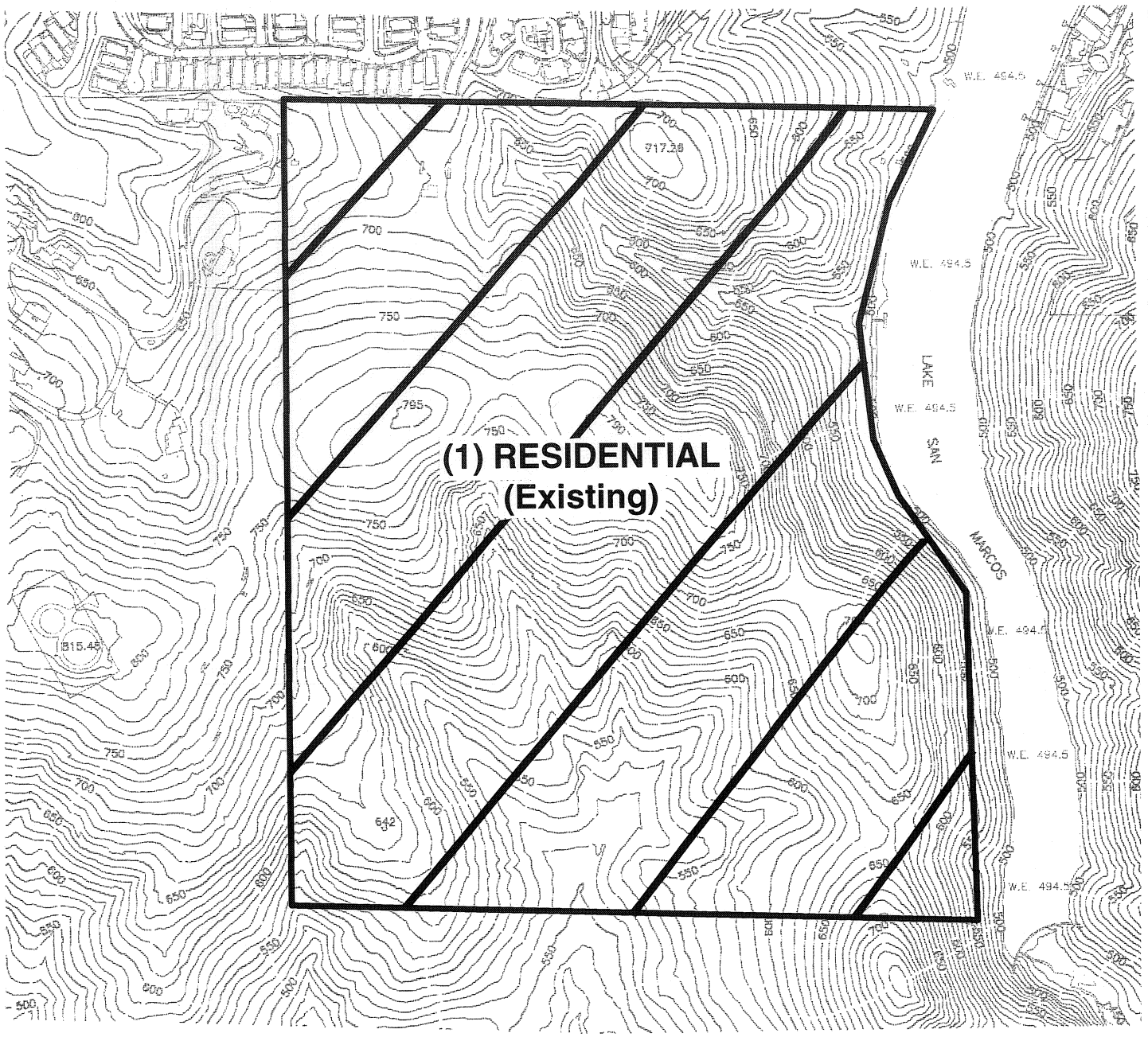
Scale: 1" = 500'
Source: Hunsaker & Associates, August 1999

Existing and Proposed Regional Categories

LAKE SAN MARCOS ESTATES

Figure 1.1-4

HELIX



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Proposed General Plan Designation: (2) Residential

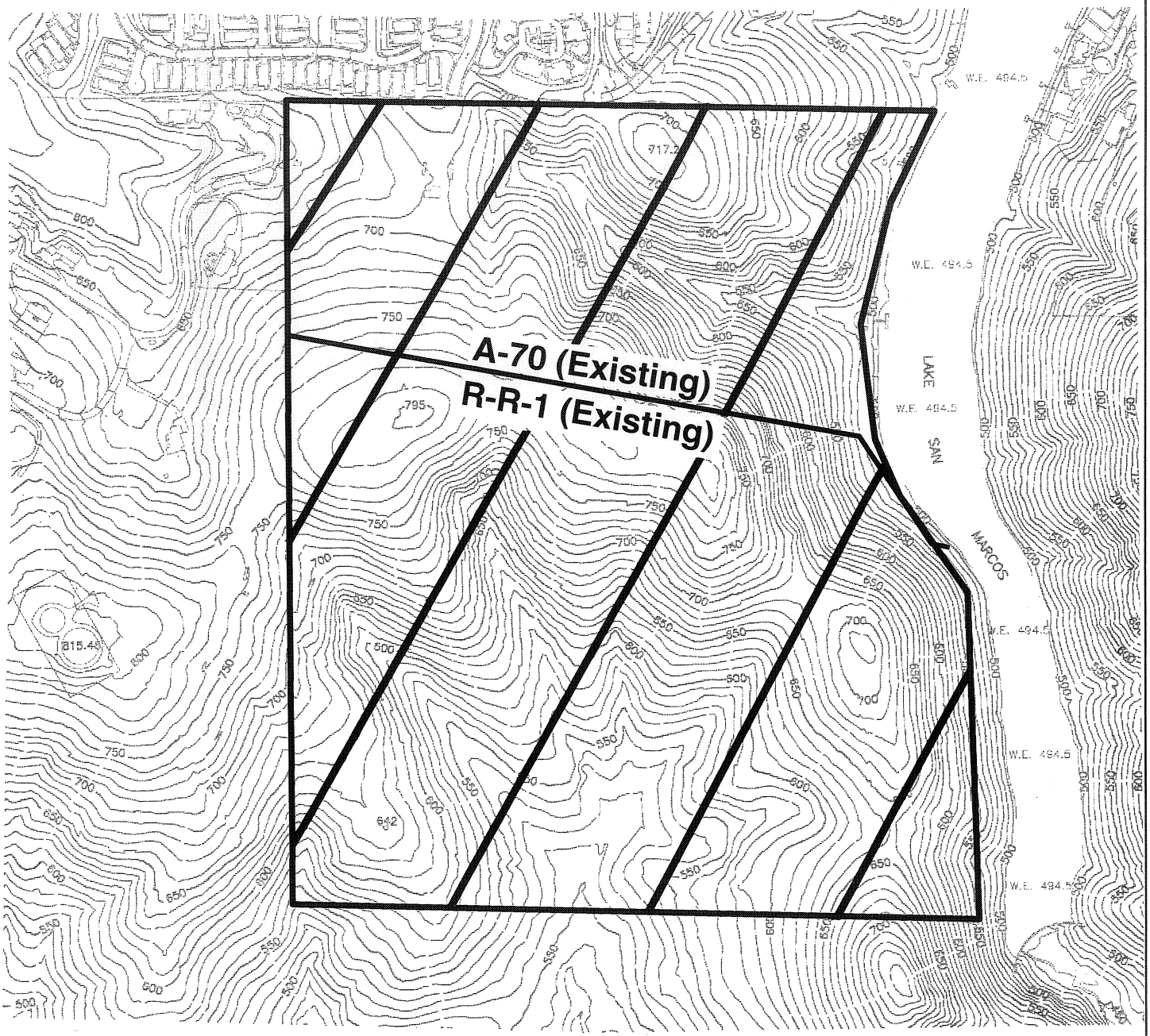
Scale: 1" = 500'
Source: Hunsaker & Associates, August 1999

Existing and Proposed General Plan Designation

LAKE SAN MARCOS ESTATES

Figure 1.1-5

HELIX



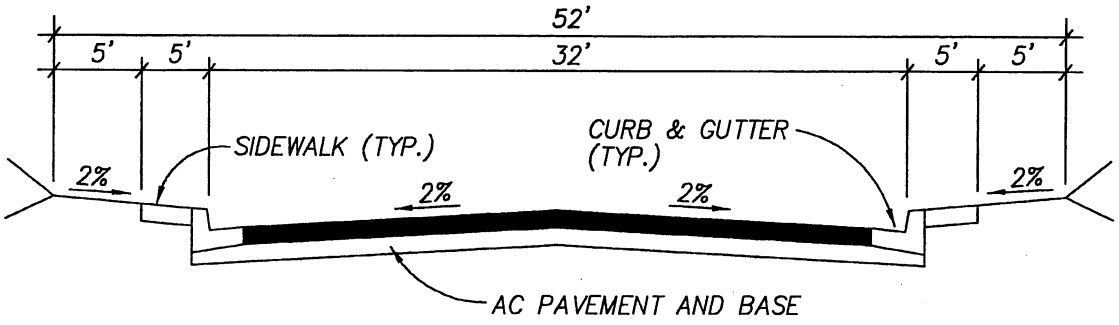
Scale: 1" = 500'
Source: Hunsaker & Associates, August 1999

Existing and Proposed Zoning

LAKE SAN MARCOS ESTATES

Figure 1.1-6

HELIX

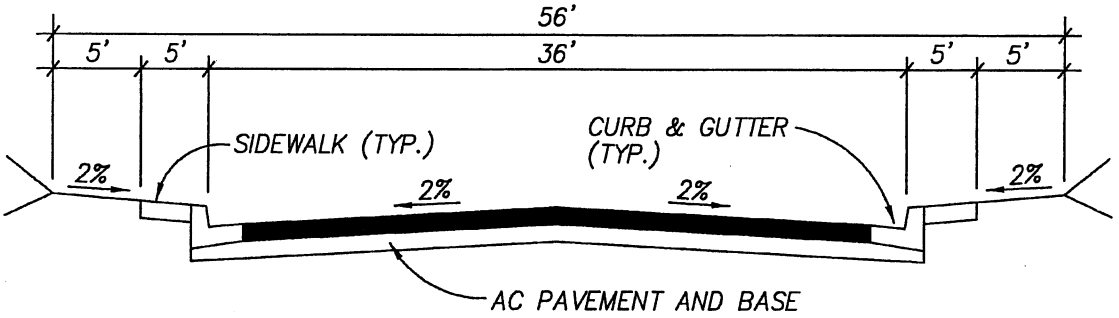


PRIVATE DRIVEWAY & GENERAL UTILITY EASEMENT

PRIVATE DRIVEWAYS "A" AND "B"

NOT TO SCALE

* DRIVEWAYS ARE PART OF PROJECT H.O.A.

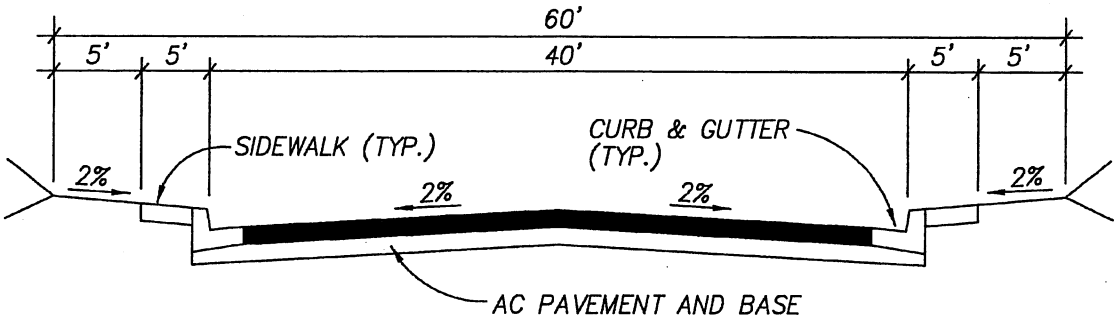


PRIVATE DRIVEWAY & GENERAL UTILITY EASEMENT

PRIVATE DRIVEWAYS "C", "D" AND "E"

NOT TO SCALE

* DRIVEWAYS ARE PART OF PROJECT H.O.A.



PRIVATE DRIVEWAY & GENERAL UTILITY EASEMENT

CAMINO DEL ARROYO WAY

NOT TO SCALE

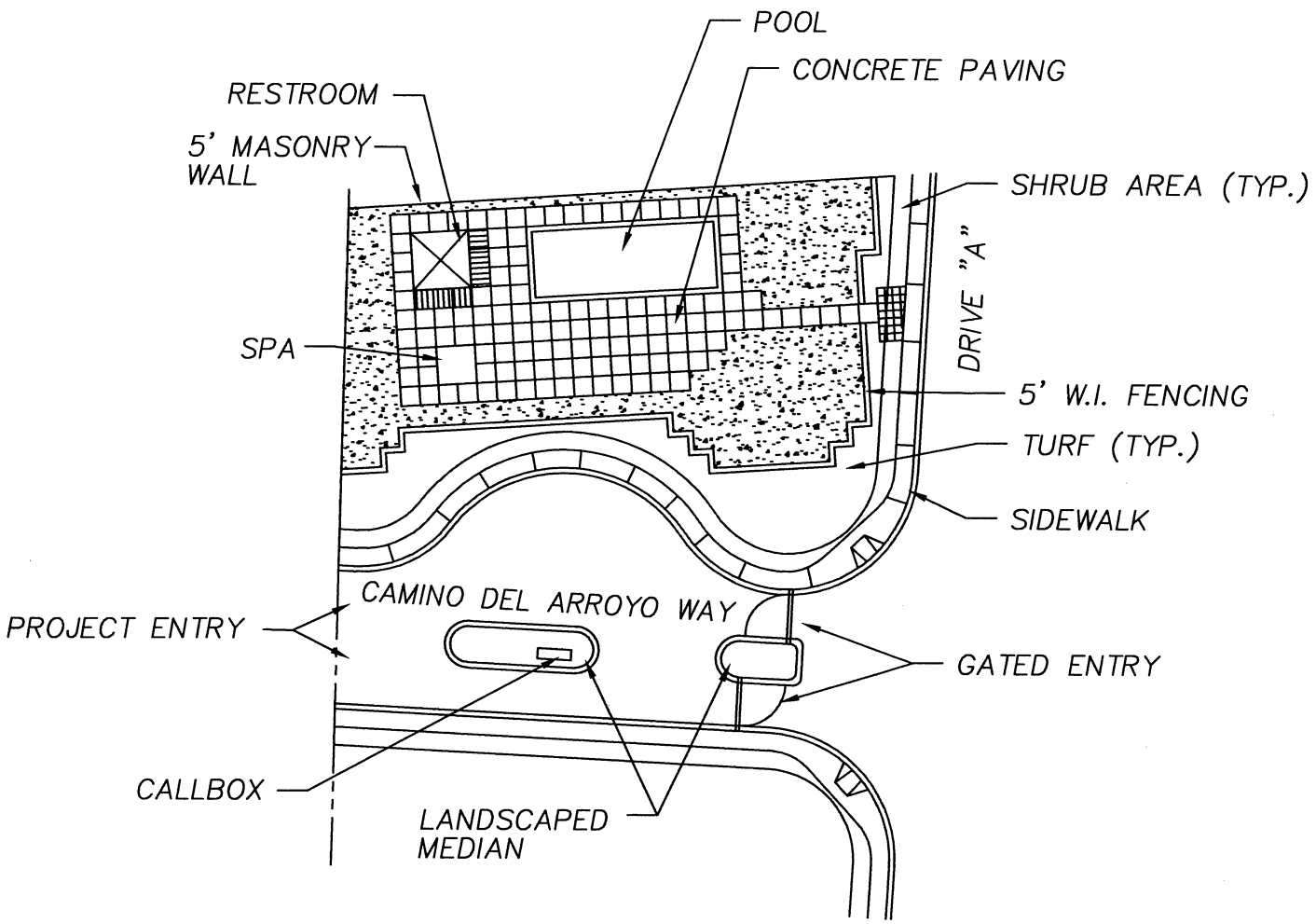
* DRIVEWAYS ARE PART OF PROJECT H.O.A.

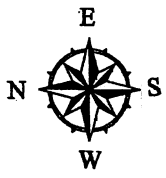
Road Cross-Sections

LAKE SAN MARCOS ESTATES

Figure 1.1-7

HELIX





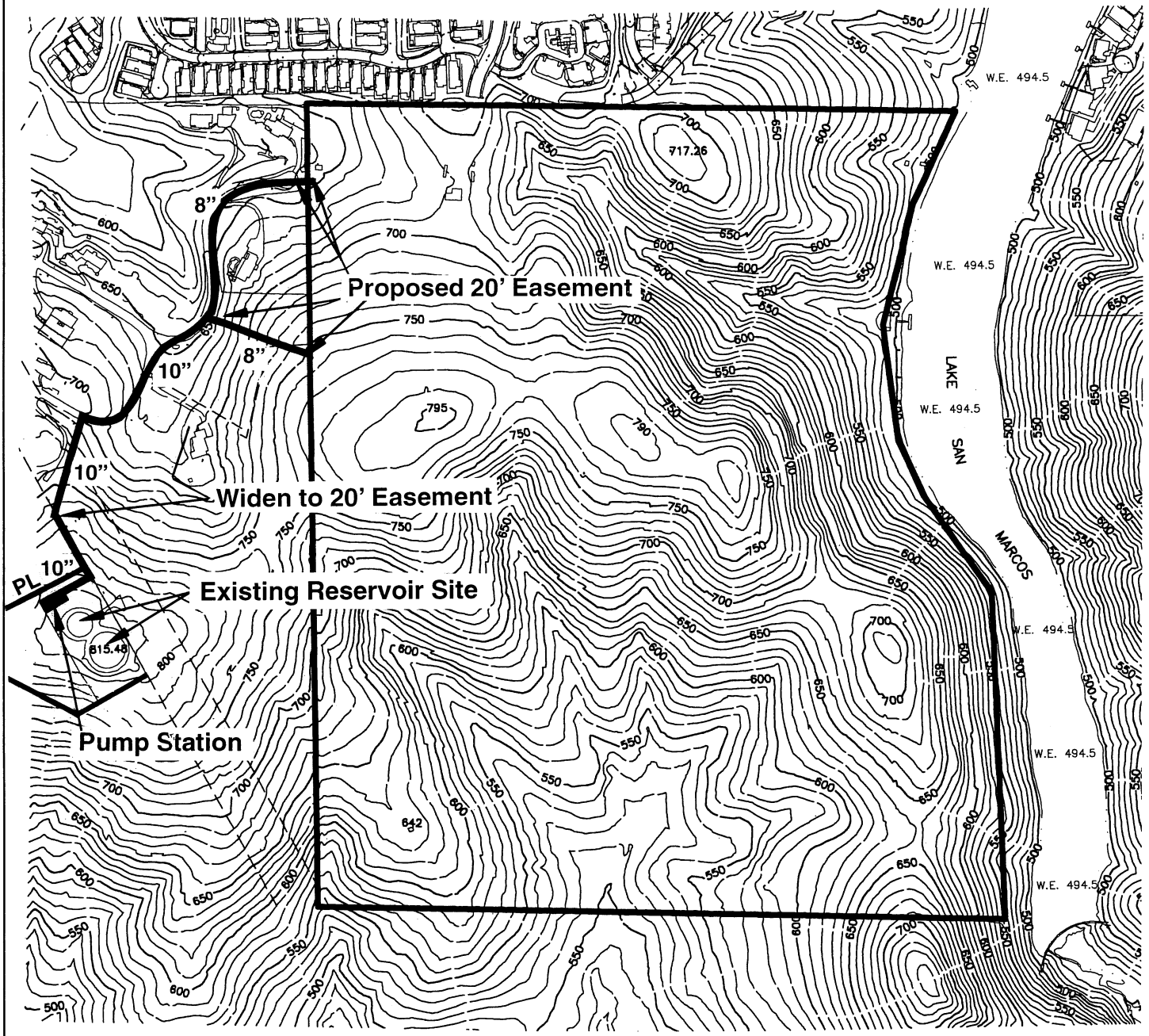
Not to Scale
Source: Hunsaker & Associates, April 2001

Entry Gate/Recreational Facilities

LAKE SAN MARCOS ESTATES

HELIX

Figure 1.1-8



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10" Pipeline Diameter

Pipeline Route

Source: 1" = 500'
Base Source: Hunsaker & Associates, August 1999
Utilities Source: Wilson Engineering, July 2000

Pump Station/Water Pipeline

LAKE SAN MARCOS ESTATES

Figure 1.1-9

HELIX

January 2000

Aerial Photograph

LAKE SAN MARCOS ESTATES

Figure 1.1-10

HELIX

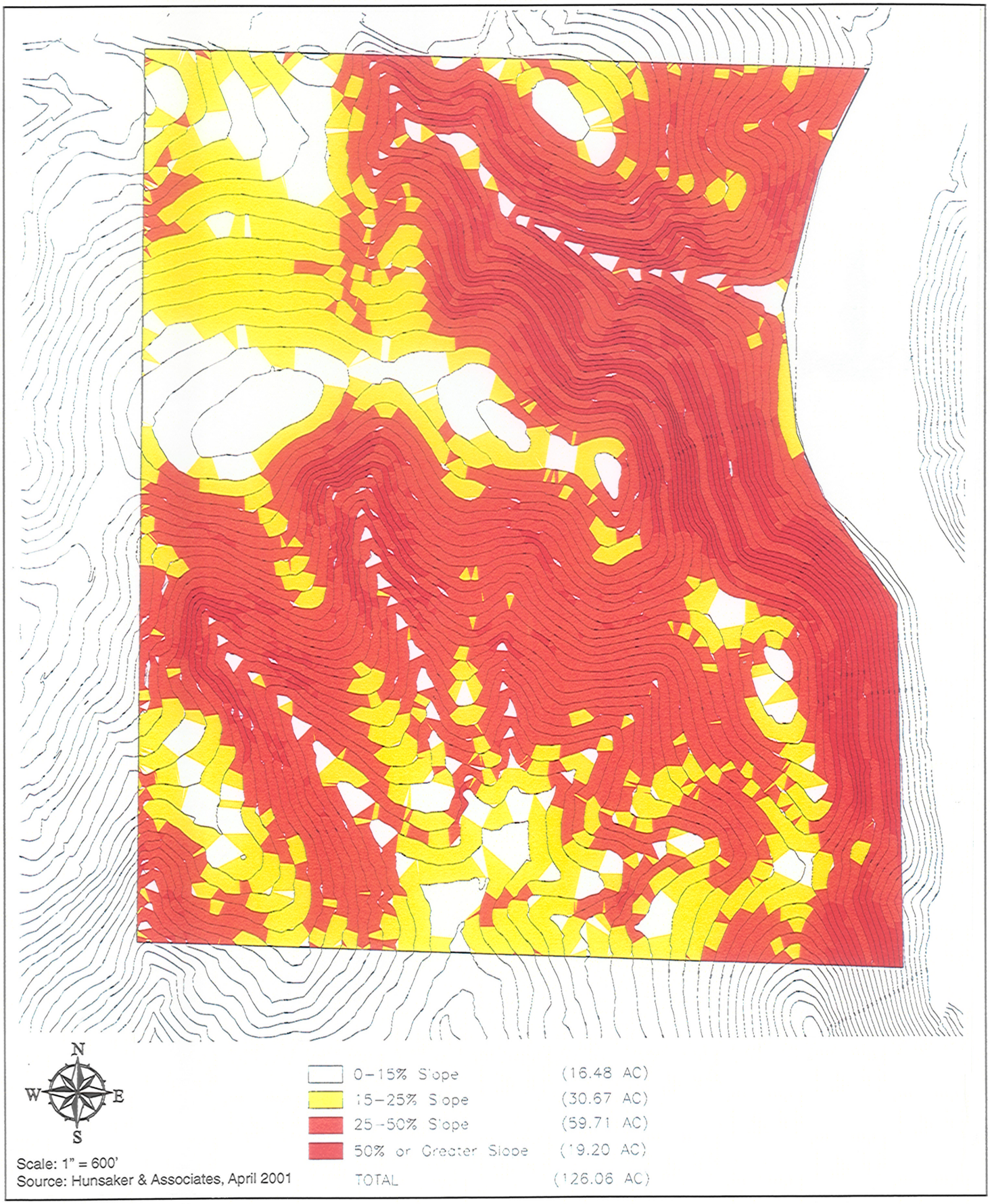
Scale: 1" = 500'
Source: Hunsaker & Associates, August 1999

Topographic Map

LAKE SAN MARCOS ESTATES

Figure 1.1-11

HELIX



Scale: 1" = 600'
Source: Hunsaker & Associates, April 2001

Slope Analysis Map

LAKE SAN MARCOS ESTATES

Figure 1.1-12

HELIX

1. View from primary access point. Transition from Camino del Arroyo Drive to future Camino del Arroyo Way.

2. View of service roads for agricultural operations.

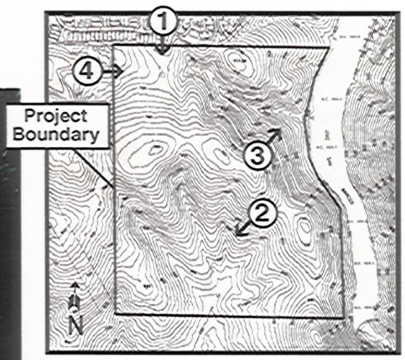


Photo Key Map

Site Photographs

LAKE SAN MARCOS ESTATES

Figure 1.1-13a

HELIX

3. View of nearby Lake San Marcos residential community.
Looking northeast from northeast quadrant of site.

4. View of northwest corner of project site,
taken from adjacent private drive.

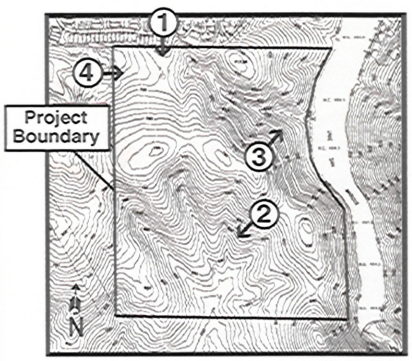


Photo Key Map

Site Photographs

LAKE SAN MARCOS ESTATES
Figure 1.1-13b

HELIX

CHAPTER 2.0 – SIGNIFICANT ENVIRONMENTAL EFFECTS

2.1 Geology

The following analysis of geologic issues is focused on potential erosion and sedimentation impacts related to development of the Proposed Project. Other potential geologic effects (including seismic hazards, expansive soils, unique geologic features and mineral resources) were determined to be less than significant in the project Notice of Preparation (NOP) dated May 25, 2000. The project NOP is included as Appendix A of this EIR, with additional discussion of effects found not to be significant provided in Subchapter 6.2.

The evaluation of potential erosion and sedimentation impacts incorporates the results of the following three technical studies prepared for the Proposed Project: *Soil and Geologic Reconnaissance, Lake San Marcos Estates, San Marcos California* (Appendix B); *Hydrology Study for Lake San Marcos Estates* (Appendix C); and *Water Quality Technical Analysis for Lake San Marcos Estates* (Appendix D). Applicable information from these three studies is summarized below (along with additional data), with the complete reports included in Appendices B through D of this EIR. References throughout this EIR summary can be found in the reference sections of the aforementioned technical studies.

2.1.1 Existing Conditions

Geologic Setting

The project site is within the Foothills Subprovince of the Peninsular Ranges Physiographic Province. The Peninsular Ranges Province is characterized by a series of northwest trending structural blocks and intervening parallel fault zones, with the Foothills Subprovince transitional between the coastal plain to the west and granitic highlands to the east.

Topography

The project site encompasses primarily steep terrain, with a number of ridges, knolls and canyons. Much of the higher on-site topography is located in the central and northern portions of the site, with slopes (and larger on-site canyons) extending down from these higher areas to the east (toward Lake San Marcos) and south (toward San Marcos Creek). The northwestern corner of the site incorporates more moderate slopes extending primarily north and west toward an unnamed ephemeral drainage located off site to the west. A majority of slopes between 25 and 50 percent are found in the southern portion of the project site, as shown in Chapter 1.0, Figure 1.1-12. Elevations within the project site range from approximately 810 feet above mean sea level (MSL) on a knoll in the west-central portion of the site, to 500 feet above MSL along portions of the eastern and southern site boundaries.

Stratigraphy

Geologic and surficial materials within the site include recent undocumented fill and topsoil deposits, Quaternary alluvium, Cretaceous granitic rocks and the Jurassic Santiago Peak Volcanics. These materials are described below in order of increasing age.

Undocumented Fill

Undocumented (i.e., non-engineered) fill deposits are present on site in association with existing unpaved roads and trails located throughout the site. Fill deposits consist of generally sandy materials, with variable amounts of clay, silt and cobble size grains. On-site fill deposits are undocumented, and therefore are not known to conform with standard engineering criteria for fill placement such as compaction and moisture content (GEOCON 1998).

Topsoil

Mapped topsoils within the project site and adjacent downstream areas include one or more individual soils of the Exchequer, Cieneba and Escondido Soil Series (U.S. Soil Conservation Service [SCS] 1973). Exchequer soils are present over much of the site and downstream areas to the east, north, northwest and southeast, while Cieneba soils occur in the southwestern corner of the site and downstream areas to the west, south and southwest. Escondido soils are limited to a small area near the northwestern corner of the site.

Exchequer soils on the project site consist primarily of well-drained, rocky silt loams on steep slopes, with shallow profiles (typically between 8 and 17 inches), rapid runoff and high erosion potential. Soils of the Cieneba Series within the site encompass excessively-drained, rocky coarse-sandy loams on moderate to steep slopes, with shallow profiles (5 to 15 inches), moderate to rapid runoff and moderate to high erosion potential depending on slope. Escondido soils within the site include well-drained, very fine sandy loams, with moderately deep profiles (20 to 34 inches), medium to rapid runoff and moderate to high erosion potential depending on slope.

Quaternary Alluvium

On-site alluvium occurs primarily within larger canyons, and consists of unconsolidated fine-grained sands, silts and clays, with some cobbles and boulders.

Cretaceous Granitic Rocks

Granitic outcrops were observed along portions of the southwestern project site (HELIX 2000a). These granitic exposures are light colored and highly weathered, and are mapped as the Escondido Creek Leucogranodiorite (Tan and Kennedy 1996). These rocks are associated with the southern California batholith, which includes a series of Cretaceous age plutonic bodies intruded over both a large geographic area for an extended period of time.

Jurassic Santiago Peak Volcanics

The majority of the site, including all areas proposed for development, is underlain by the Jurassic Santiago Peak Volcanics, with surface exposures along several larger on-site knolls and canyon slopes. The Santiago Peak Volcanics consist mainly of fractured metavolcanic rocks, although metasedimentary and other (e.g., pyroclastic) members may also be present. Observed outcrops of the Santiago Peak Volcanics were highly decomposed and friable at the surface (with associated colluvial or slopewash deposits present), although the depth of such weathering is variable (GEOCON 1998).

Hydrologic Characteristics

Approximately half of the project site drains east into Lake San Marcos, including much of the higher terrain in the northeast, north-central, central and extreme southeastern areas. East-flowing surface drainage from the northern and central portions of the site is primarily conveyed within a steep canyon extending down toward the lake, while most other east-flowing runoff consists of overland (non-point) flow. Most of the southern portion of the site drains to the south through several steep canyons, with this flow ultimately entering San Marcos Creek approximately 0.5 mile south of the site. The northwestern corner of the site drains generally north and west, with this runoff entering an unnamed ephemeral drainage approximately 100 feet west of the site. Additional description of on-site drainage characteristics is provided in Subchapter 2.2, Water Resources.

A regional groundwater aquifer encompassing approximately 55 square miles occurs generally along the trace of San Marcos Creek, with downstream portions of this aquifer located south and west of the project site. Shallow groundwater is known to occur variably in portions of the creek downstream of Lake San Marcos, and periodically produces surface flow (Risk Sciences 1992). Shallow groundwater is not known or expected to be

present on site, although seasonally "perched" groundwater aquifers may occur in alluvial deposits associated with some of the larger on-site canyons (GEOCON 1998).

Regulatory Guidelines

The Proposed Project is subject to a number of regulatory requirements related to erosion control, as summarized below.

National Pollutant Discharge Elimination System Requirements

The Proposed Project is subject to applicable elements of the federal Clean Water Act, including the National Pollutant Discharge Elimination System (NPDES). Specific NPDES requirements for the project related to erosion and sedimentation entail obtaining a General Construction Activity Storm Water Permit (NPDES No. CAS000002). Construction activity permits are required for applicable sites exceeding five acres and are issued by the State Water Resources Control Board (SWRCB) under an agreement with the U.S. Environmental Protection Agency (EPA). Specific conformance requirements include implementing an approved Storm Water Pollution Prevention Plan (SWPPP) and monitoring program, with pollution control measures involving the use of best available technology (BAT), best conventional pollutant control technology (BCT), and/or best management practices (BMPs) pursuant to direction by the SWRCB and the applicable Regional Water Quality Control Board (RWQCB) office. Additional discussion of permit and SWPPP requirements is provided below in Section 2.1.3 (Analysis of Project Effects).

County of San Diego Requirements

The County of San Diego Storm Water Quality Management Ordinance (No. 8394) addresses the control and management of eroded materials and other contaminants in stormwater discharge. It includes measures for implementing construction BMPs, and may require the preparation of an SWPPP under some circumstances and at the County's discretion. Because this ordinance is not intended to duplicate requirements of other regulatory agencies, however, activities regulated under a valid RWQCB discharge permit are specifically exempted. Based on this exemption language and the requirements described above for NPDES construction permitting, the County Storm Water Ordinance is not expected to generate substantial requirements for the Proposed Project.

Various elements of the San Diego County General Plan (including the 1993 Conservation Element) include references to preserving and protecting water quality in "reservoirs, lakes, rivers, streams and groundwater supplies." A number of goals, policies and action programs related to water quality are identified in these General Plan elements, with such items typically involving general directives including the preservation of applicable wetland and riparian areas, ensuring that land use development plans are compatible with protection of water resources, and requiring discretionary permits (e.g., grading permits) for appropriate development activities. In keeping with these directives, most construction and development activities in the County of San Diego are subject to erosion control requirements in applicable County ordinances (e.g., Storm Water, Grading and Resource Protection), as well as the NPDES construction guidelines noted above under federal requirements.

2.1.2 Thresholds of Significance

Project-related impacts associated with erosion and sedimentation are considered potentially significant if one or more of the following thresholds are exceeded:

1. The graded or cleared portion of the site includes more than 10,000 square feet (ft^2) with slopes of 15 percent (approximately 6.5:1, horizontal to vertical) or greater.

2. Project grading or clearing will occur within 50 feet of any water course or mapped 100-year floodplain.

3. Project grading will involve volumes of 3,000 cubic yards (yd^3) or more, or manufactured slope heights of 15 feet or greater.

4. Project implementation will substantially increase on- or off-site surface runoff volumes or velocities.

5. The Proposed Project will generate erosion impacts that constitute a structural hazard or significant visual effect, or will result in sediment or drainage flows that cannot be contained or controlled on site.

6. Project implementation will generate impacts that violate or conflict with any applicable federal, state, or local regulations, ordinances or policies.

The thresholds of significance noted above were developed from several sources, including: the State CEQA Guidelines Environmental Checklist Form; the County of San Diego Environmental Analysis Form; the County of San Diego Resource Protection Ordinance; the Conservation Element of the Sand Diego County General Plan; and the County of San Diego Grading Ordinance (Division 7 of the County Code). These thresholds were utilized because they address the potential concerns relative to erosion and sedimentation as a result of substantial grading, cut and fill, and drainage modifications.

2.1.3 Analysis of Project Effects and Determination as to Significance

2.1.3a Short-Term Construction-Related Erosion and Sedimentation Impacts

Project implementation would involve substantial grading and excavation in steep terrain (i.e., slopes of up to 50 percent), including approximately 530,000 c.y. of balanced cut-and-fill (i.e., no material import or export) and the construction of several large (up to approximately 115 feet high) manufactured slopes with maximum grades of 2:1 (horizontal to vertical). The project development footprint also encompasses the extreme upper portion of a steep canyon described under Existing Conditions that extends east to Lake San Marcos. After construction, the developed portion of the project site (36.2 acres) would consist of a residential development and associated uses (e.g., access roads and a swimming pool/spa). The remaining 90 acres of the site would retain existing agricultural use (primarily avocado orchards) and natural open space. Potential project-related erosion and sedimentation impacts are associated predominantly with short-term construction activities, as described below. Determination of significance levels for these impacts are based on the threshold criteria described above in Section 2.1.2. Erosion and sedimentation is not considered to be a significant long-term concern for the Proposed Project, as all developed areas would encompass pavement, structures or landscaping. Accordingly, the quantities of eroded material generated on site over the long-term would be relatively minor, with the associated potential for significant off-site sediment transport considered low.

Proposed Project grading, excavation and construction activities would increase the potential for erosion and transport of material both within and downstream of the site. Specifically, such activities would entail the removal of stabilizing vegetation, the excavation of existing compacted (and generally dense) surface materials from cut areas, and the redeposition of these materials as fill deposits in proposed development pads and manufactured slopes. While proposed fill deposits would be recompacted to support project loading and would ultimately be stabilized (e.g., through paving or landscaping), erosion potential associated with fill deposits and graded areas would be higher in the short-term than for pre-construction conditions. Developed areas would be especially susceptible to erosion between the commencement of grading and the completion of project construction and landscaping.

As described above under Regulatory Guidelines, the Project Applicant would be required to obtain an approved NPDES General Construction Activity Storm Water Permit prior to project development. Specific elements required in an approved construction storm water permit include the preparation and implementation of an SWPPP, with such plans requiring detailed measures to prevent and control the off-site discharge of contaminants (including sediment) in storm water runoff. While site-specific measures vary somewhat with conditions such as proposed grading parameters, slope, and soil characteristics, detailed guidance for preparing SWPPPs is provided in the California Storm Water Best Management Practices Handbooks (Stormwater

Quality Task Force 1993). Specific erosion and sedimentation control measures identified in these handbooks that would likely be applicable to project construction include: scheduling to minimize work during the rainy season; preservation of existing vegetation wherever feasible; revegetation of applicable disturbed areas as soon as feasible; use of mulch, mats and/or geotextiles to stabilize graded areas (particularly slopes); dust control (e.g., through regular watering); use of rock or brush filters on manufactured slopes; use of storm drain inlet filters; stabilization of construction ingress/egress points (e.g., through temporary paving); use of temporary berms or swales to direct runoff; use of terraced or irregular slope surfaces; and use of temporary sediment catchment devices such as sand bags, hay bales, silt fences or desilting basins. Proposed erosion control measures would also be subject to review by the County, in association with the issuance of a project grading permit and applicable County ordinances. Such multi-agency review provides an opportunity for thorough scrutiny of proposed erosion control methods, although County requirements would not be expected to differ significantly from those described above for NPDES permitting.

The Proposed Project design includes three outlet points for on-site drainage during and after construction, with approximately 38 percent of site runoff flowing east to Lake San Marcos, 48 percent flowing south to San Marcos Creek, and 14 percent flowing west to an unnamed tributary of San Marcos Creek (see Subchapter 2.2, Water Resources). The eastern outlet would drain into the existing canyon described above in Section 2.1.1 (under Hydrologic Characteristics), with the storm drain outlet located approximately 700 feet upstream and 75 feet higher (i.e., in elevation) than the canyon mouth at Lake San Marcos. The project design includes a 0.73-acre-foot desilting basin at the described eastern storm drain outlet, with this basin designed to capture east-flowing runoff, remove associated sediment loads, and provide energy dissipation prior to discharge. The proposed basin design conforms with County of San Diego hydrologic standards, and includes criteria such as calculations of graded acreage, associated soil loss and slope gradients (Hunsaker & Associates 2000b). The basin would be constructed prior to site grading to remove sediment from construction period runoff, and would be retained as a permanent site feature. Properly designed and maintained basins of this type typically remove up to 65 percent of suspended solids (Appendix D). The proposed basin would be maintained in the short-term (i.e., during project construction) by the construction contractor, and in the long-term by the residential homeowner's association (i.e., through issuance of a contract to a maintenance company). Specific maintenance efforts would include regular inspection of the basin during the rainy season to ensure proper working conditions, and removal and proper disposal of accumulated sediment at appropriate times (e.g., prior to the beginning of the rainy season). After leaving the described basin, east-flowing site runoff would move approximately 700 feet down the canyon to Lake San Marcos. The canyon itself is likely to provide some level of natural filtration currently, which is expected to continue as runoff flows across alluvial deposits and existing vegetation which provide additional runoff infiltration and sediment removal. The proposed western and southern storm drain outlets do not include desilting basins, although the southern outlet is located at a greater distance from downstream receiving waters (i.e., 0.5 mile from San Marcos Creek to the south), and would thus be subject to additional natural filtering. Flows from the western outlet would travel approximately 3.5 miles through an ephemeral drainage (and would therefore also be subject to infiltration and filtering) before entering San Marcos Creek. West flowing runoff would enter the noted drainage approximately 100 feet west of the site, via a proposed 30-inch diameter storm drain (Hunsaker & Associates 2000c).

The above-described project design measures and NPDES stormwater permit requirements would substantially reduce potential short-term erosion and sedimentation. Because of the proximity and/or sensitivity of receiving waters, the steep nature of local terrain, and the fact that the detailed project SWPPP has not yet been prepared; however, project construction as proposed could still potentially result in significant erosion and sedimentation. This conclusion is based on the potential for project implementation to exceed Significance Threshold Nos. 1 through 5 identified above in Section 2.1.2. Due to the described requirements (and related project design measures) for conformance with applicable regulatory requirements, the Proposed Project is not expected to exceed Significance Threshold No. 6. A number of site-specific mitigation measures related to identified potential erosion and sedimentation impacts are described below in Section 2.1.4. Temporary desilting basins, long-term/permanent energy dissipation devices and control of runoff from manufactured slopes would reduce the potential for short- and long-term erosion and sedimentation impacts. These measures would be implemented during project construction, and are intended to compliment the above described project design elements and permitting requirements. The combination of these efforts would meet all

applicable regulatory guidelines and reduce potential short-term erosion and sedimentation impacts below a level of significance. If during preparation of the project SWPPP it is determined that additional or alternative erosion control measures would be more appropriate than those identified in this analysis, the SWPPP directives should take priority.

2.1.4 Mitigation Measures

The following measures shall be implemented in addition to all Proposed Project design elements and permitting requirements to mitigate for impact 2.1.3a. The combination of these efforts is sufficient to meet all applicable regulatory guidelines and avoid or reduce all potential project-related erosion and sedimentation impacts below a level of significance. The Project Applicant will be responsible for the implementation, installation and, where applicable, removal of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential home owner's association (HOA).

1. Temporary desilting basins will be employed at the western and southern storm drain outlets during project grading and construction. The exact design and location of these basins will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP. The described basins will be removed by the Project Applicant after completion of project construction (including landscaping).

2. Permanent energy dissipation devices (e.g., riprap aprons) will be installed prior to project grading at all three proposed storm drain outlet points. The exact design and location of these devices will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP.

3. Runoff will be directed away from manufactured slope faces through the use of devices such as temporary berms, hay bales or sandbags placed along the slope tops. Alternatively, the potential use of permanent brow ditches (or similar devices) along slope tops will be evaluated in the project NPDES General Construction Activity Storm Water Permit SWPPP. Such devices, if deemed appropriate in the SWPPP, would provide both short-term (construction) and long-term runoff control for manufactured slopes.

2.1.5 Conclusions

Implementation of the Proposed Project would result in potentially significant erosion and sedimentation impacts as a result of proposed grading and construction operations. The Proposed Project design contains a number of elements that would partially avoid or reduce these effects (e.g., a proposed desilting basin), and the project would be subject to review and approval pursuant to applicable regulatory guidelines. These considerations, combined with the mitigation measures identified in this analysis, would avoid or reduce all identified erosion and sedimentation impacts below a level of significance, and would allow the Lake San Marcos Estates Project to conform with all applicable regulatory guidelines.

2.2 Water Resources

The following analysis of water resource issues is focused on potential project related impacts to drainage patterns, runoff rates and volumes, and water quality. Other potential water resource effects (including the use of imported water and groundwater resources) were determined to be less than significant in the project Notice of Preparation (NOP) dated May 25, 2000. The project NOP is included as Appendix A of this EIR, with additional discussion of effects found not to be significant provided in Subchapter 6.2.

The evaluation of potential water resource impacts incorporates the results of the following three technical studies prepared for the Proposed Project: *Hydrology Study for Lake San Marcos Estates* (Appendix C); *Water Quality Technical Analysis for Lake San Marcos Estates* (Appendix D); and *Soil and Geologic Reconnaissance, Lake San Marcos Estates, San Marcos California* (Appendix B). Applicable information from these three studies is summarized below (along with additional data), with the complete reports included in Appendices B through D of this EIR. References throughout this EIR summary can be found in Section 6.0 of Appendix D.

2.2.1 Existing Conditions

Topography

The project site encompasses primarily steep terrain, with a number of prominent ridges, knolls and canyons. Additional description of site topography is provided in Subchapter 2.1 (Geology) of this EIR.

Surface Water

Hydrologic and Watershed Characteristics

The project site is within the Carlsbad Hydrologic Unit (HU), 1 of 11 such drainage areas designated in the 1994 San Diego Regional Water Quality Control Board (RWQCB) Water Quality Control Plan for the San Diego Basin (Basin Plan). The Carlsbad HU is a roughly triangular shaped area of approximately 210 square miles, and extends from east of Lake Wohlford to Solana Beach-Carlsbad along the coast (Figure 2.2-1). Annual precipitation in the Carlsbad HU ranges from approximately 12 inches along the coast to over 20 inches east of Lake Wohlford, with the project area receiving approximately 12 to 15 inches per year. The Carlsbad HU is divided into a number of hydrologic areas and subareas based on local drainage characteristics. The project site is within the San Marcos Hydrologic Area (HA), which extends from the Merriam Mountains to the coast and generally coincides with the San Marcos Creek watershed (Figure 2.2-1). The San Marcos Creek watershed incorporates a variety of development types and densities, including natural open space and rural residential/agricultural use in the Twin Oaks Valley/Merriam Mountains vicinity, and high density industrial, residential and commercial sites in the communities of San Marcos, Carlsbad and La Costa. The creek is channelized in places and receives primarily urban runoff in developed reaches.

The project site currently supports extensive agricultural development in the form of avocado orchards. While this development has involved grading activities to construct facilities such as unpaved roads and irrigation systems, on-site drainage patterns have apparently not been substantially altered from pre-development conditions (mid 1970s). All surface drainage within the project site ultimately flows into Lake San Marcos, San Marcos Creek and Batiquitos Lagoon, although local drainage patterns are variable as described below and shown on Figure 2.2-2. Batiquitos Lagoon is a coastal estuary at the mouth of San Marcos Creek (approximately three miles west of the site), and encompasses marine and tidal habitats that support a number of sensitive floral and faunal species. The lagoon has been subject to substantial restoration efforts including dredging and habitat creation, but still exhibits adverse water quality

conditions related to the influx of contaminants such as sediment, nutrients and coliform bacteria (State Water Resources Control Board [SWRCB] 1999, 1997, 1994; RWQCB 1991). Lake San Marcos receives runoff from urban development (e.g., residential and golf course uses) surrounding the northern half of the lake, with this development extending down to the lake shore in most areas.

Approximately half of the project site drains east into Lake San Marcos, including much of the higher terrain in the northeast, north-central, central and extreme southeastern areas. East-flowing drainage from the northern and central portions of the site is primarily within a steep canyon extending down toward the lake, while most other east-flowing runoff is overland (non-point) flow. The slopes of the noted east-flowing canyon contain dense vegetation, while the canyon bottom is more sparsely vegetated and contains substantial alluvium. The described canyon does not encompass a defined channel, and no wetland or riparian vegetation is present (HELIX 2000b). A developed recreation site (including a picnic area, restrooms and docks) is located at the mouth of the canyon, adjacent to Lake San Marcos. The lack of a developed storm drain or channel through this recreational area, coupled with the absence of a defined channel and the noted accumulation of alluvium within the canyon, indicate that runoff volumes are generally not substantial. Runoff within the canyon from most storm events likely percolates into the alluvium and flows down to the lake below the surface.

The southern portion of the site drains generally to the south through several steep canyons, with this flow ultimately entering San Marcos Creek approximately 0.5 mile south of the site. The northwestern corner of the site drains primarily north and west, with this runoff entering an unnamed ephemeral drainage approximately 100 feet west of the site. This unnamed drainage continues generally west and eventually (approximately 3.5 miles downstream of the site) flows into San Marcos Creek near La Costa (just upstream of Batiquitos Lagoon).

Drainage Facilities and Flood Hazards

As noted above, existing agricultural development within the site has apparently resulted in no significant alteration of natural drainage patterns, with no major drainage facilities (e.g., bridges or concrete channels) present. Floodplain mapping has been conducted within the site and vicinity by the Federal Emergency Management Agency (FEMA). The entire site has been mapped as Zone C, or "areas of minimal flooding" (FEMA 1997). The closest mapped 100-year floodplains are associated with Lake San Marcos (an artificially created reservoir in the San Marcos Creek drainage), with the floodplain limit located approximately 50 to 100 feet (and including a 10- to 50-foot vertical separation) from the eastern site boundary at its closest point (Hunsaker & Associates 2000a). Downstream drainage facilities include a number of roadway crossing structures over San Marcos Creek (e.g., at Rancho Santa Fe Road and El Camino Real) and the unnamed drainage west of the site (i.e., at Rancho Santa Fe and Alga roads).

Groundwater

The San Marcos HA incorporates an approximately 55-square mile groundwater aquifer that is generally located along the trace of San Marcos Creek. Shallow groundwater is known to occur variably along San Marcos Creek, and periodically surfaces in portions of the creek downstream of Lake San Marcos (Risk Sciences 1992). Shallow groundwater is not known or expected to be present on site, although seasonally "perched" groundwater aquifers may occur in alluvial deposits associated with some of the larger on-site canyons (GEOCON 1998).

Geologic/Soil Characteristics and Erosion Potential

Geologic and soil exposures within the majority of the site, including the 36.2 acres proposed for development, include the Jurassic Santiago Peak Volcanics and loamy (often rocky) soils of the Exchequer, Cieneba and Escondido soil series. These soils exhibit generally high erosion potentials, with additional discussion of on-site geologic and soil conditions provided in Subchapter 2.1 (Geology) of this EIR.

Water Quality

Surface Water

Surface water within the project site consists almost exclusively of intermittent runoff associated with storm events. No known water quality data are available for on-site runoff, although storm flows are typically subject to wide variations in water quality with factors such as runoff volume, velocity and adjacent land uses. A summary of typical urban contaminant sources and loadings is shown in Tables 2.2-1 and 2.2-2.

As described previously, surface waters located downstream from the project site include Lake San Marcos, San Marcos Creek, an unnamed tributary to San Marcos Creek and Batiquitos Lagoon. Surface flows in the unnamed tributary west of the site consist predominantly of storm water and urban irrigation (i.e., landscaping) runoff. Water quality in the described tributary is expected to be generally poor. Existing development adjacent to Lake San Marcos, along with related recreational activities (e.g., boating), likely generate substantial quantities of urban contaminants. Available water quality data for Lake San Marcos and San Marcos Creek in the project vicinity include quantitative sampling and testing from a 1992 study prepared for the Vallecitos Water District (Risk Sciences 1992), qualitative assessments conducted regularly by the SWRCB and RWQCB, and a biological assessment conducted by the RWQCB (1999). The referenced 1992 study was conducted for a proposed live stream discharge of reclaimed water into San Marcos Creek, which was not implemented (RWQCB 2000). The 1992 study evaluated both chemical water quality and associated effects to aquatic biological habitats in Lake San Marcos and adjacent reaches of San Marcos Creek. A description of sampling locations and methodologies for the 1992 study is provided in Appendix D, with the principal conclusions of this analysis summarized below:

- The San Marcos Creek system is essentially divided into two separate water bodies (i.e., in terms of water quality and aquatic habitats), because the Lake San Marcos Dam has no spillway and thus prevents low flows from reaching areas downstream of the dam. Downstream flows from the lake are limited to situations when the dam is overtopped (i.e., larger storm events).

- Water quality in the tested portions of San Marcos Creek and Lake San Marcos was generally moderate to poor, with high levels of hardness (calcium and magnesium), nutrients and certain contaminants (e.g., copper) that could pose a toxicity threat to aquatic life. Recreational boating in Lake San Marcos is likely the primary contributor of toxic substances to associated portions of the San Marcos aquatic ecosystem.

- San Marcos Creek and Lake San Marcos exhibit high nutrient levels (nitrogen and phosphorus) and low flows which stimulate high growth levels of algae and aquatic plants. These conditions, combined with warm temperatures and active bacterial populations, can lead to oxygen deficiencies which adversely affect aquatic ecosystems.

- The San Marcos Creek system (including the lake) exhibits a low density and diversity of aquatic life, for reasons including poor quality substrate (i.e., for spawning), inadequate flows, high temperatures and low oxygen levels.

The SWRCB and RWQCB produce regular assessments of statewide and regional water quality conditions. These studies typically provide qualitative water quality ratings (e.g., good, intermediate or impaired, relative to Basin Plan beneficial uses as described below under Regulatory Guidelines), quantitative watershed data, and contaminant types and sources for selected waters. The following conclusions are drawn from these data, with additional discussion provided in Appendix D:

- Batiquitos Lagoon has exhibited impaired water quality in association with non-point runoff contamination (e.g., sediment, nutrients and coliform bacteria) since at least the early 1990s.

- Lake San Marcos was reported as exhibiting "good" water quality in 1991 and 1994, and was identified as "fully supporting" beneficial uses in 1996.

- Water quality/beneficial use support in San Marcos Creek was listed as "unknown" or "not assessed" between 1991 and 1998.

- The San Marcos HA Groundwater Basin was reported to exhibit "intermediate" water quality between 1991 and 1998, with beneficial use support listed as "threatened" in 1996.

Because the SWRCB/RWQCB assessments are statewide in scope, primarily qualitative in nature, and do not include any site-specific data (i.e., water quality sampling) for applicable waters, the 1992 Risk Sciences analysis is considered to represent a more probable scenario of current water quality conditions in San Marcos Creek and Lake San Marcos. It should be noted, however, that the 1992 sampling effort was a single testing event conducted at a small number of test sites, and associated conclusions should therefore not be taken out of context. Despite the above conclusions on water quality, the identification of Lake San Marcos as "fully supporting" beneficial uses in 1996 may be accurate. This assessment is based on the fact that meeting beneficial use criteria does not necessarily imply good water quality conditions, as described below under Regulatory Guidelines.

The previously referenced 1999 Biological Assessment Report reflects recent (since 1997) attempts by the RWQCB to incorporate bioassessment data into ambient water quality monitoring. The 1999 report includes the results of testing efforts for benthic macroinvertebrate (BMI) communities conducted in 1998 and 1999 at 48 locations in the San Diego region, including four locations along San Marcos Creek in the project site vicinity. A discussion of sampling locations and methodologies is provided in Appendix D. All 48 testing sites were numerically ranked for the condition of BMI communities, with the four noted testing sites along San Marcos Creek generally at or below the mean ranking for all tested sites. Because BMI communities are sensitive to water quality criteria, the low rankings for sites along San Marcos Creek likely result at least partially from poor local water quality conditions.

Based on the above described analyses, overall existing water quality in San Marcos Creek is generally moderate to poor, while existing water quality in Lake San Marcos is characterized as generally moderate.

Groundwater

No quantitative groundwater quality data for the San Marcos HA reservoir were found during preparation of this analysis. The above referenced SWRCB and RWQCB water quality assessments for 1991 through 1998 include qualitative descriptions of groundwater quality within the San Marcos HA as "intermediate," and conclude in the 1996 assessment that beneficial uses for groundwater in the San

Marcos HA were "threatened." While no evidence of current groundwater use in the San Marcos HA is known, such uses (e.g., for agricultural or landscape irrigation) may be ongoing and have almost certainly occurred historically. It is considered unlikely that groundwater is currently used for consumptive purposes in downstream areas, due to the presence of substantial nearby urban development, the availability of imported water and the reported relatively low quality of local groundwater. Groundwater is not currently used within the project site and no associated water quality data are known or expected to exist.

Regulatory Guidelines

The Proposed Project is subject to a number of regulatory requirements associated with federal, state and local guidelines, as summarized below.

National Pollutant Discharge Elimination System (NPDES) Requirements

The Proposed Project is subject to applicable elements of the federal Clean Water Act, including the NPDES. Specific NPDES requirements include obtaining a General Construction Activity Storm Water Permit (NPDES No. CAS000002) and, if applicable, a Dewatering Waste Discharge Permit (NPDES No. CA0108707), as well as conformance with NPDES municipal storm water and urban runoff guidelines (NPDES No. CA0108758). Construction Activity permits are described in Subchapter 2.1 of this EIR (Geology) and below in Section 2.2.3, Analysis of Project Effects.

Dewatering permits are required by the RWQCB prior to disposal of extracted groundwater, and are intended to ensure compliance with applicable water quality and Basin Plan beneficial use objectives (as described below). Best Management Practices (BMPs) are typically required to meet these objectives, and may involve a number of physical, chemical and/or thermal parameters depending on site-specific conditions.

For the management of storm water, local agencies in the San Diego region (including the County of San Diego) must comply with NPDES guidelines for storm water and urban runoff, with these guidelines implemented by the San Diego RWQCB through Order No. 2001-01. Specifically, this order requires new development (and redevelopment projects) to meet (among other criteria) a number of numeric and qualitative standards related to water quality and runoff discharge. Specifically, these include: (1) use of volume- or flow-based structural BMPs to mitigate (i.e., infiltrate, filter or treat) runoff from a design storm event or intensity (e.g., a 24-hour, 85th percentile storm for volume criteria, and the 85th percentile hourly rainfall intensity multiplied by a factor of two for flow-based criteria); and (2) reduction of post-development runoff containing pollutant loads which cause or contribute to an exceedance of receiving water quality objectives to the maximum extent practicable. The noted requirements also mandate co-permittees (i.e., the County of San Diego) to implement an Urban Runoff Management Program, including efforts such as development review, source control, public education and monitoring/ maintenance.

Basin Plan Requirements

Beneficial Uses. The San Diego Basin Plan (RWQCB 1994) establishes a number of beneficial uses and water quality objectives for surface and groundwater resources. Beneficial uses are generally defined in the Basin Plan as "the uses of water necessary for the survival or well being of man, plus plants and wildlife." Identified beneficial uses for surface and coastal waters within and downstream of the site are summarized below. The Basin Plan does not specifically identify beneficial uses for Lake San Marcos, although San Marcos Creek beneficial uses are applicable to the lake (RWQCB 2000).

- San Marcos Creek/Lake San Marcos – Surface water beneficial uses include agricultural supply, contact and non-contact recreation, warm freshwater habitat and wildlife habitat. Identified beneficial uses for groundwater resources include municipal, agricultural and industrial supply (with restrictions in applicable geographic areas).

- Batiquitos Lagoon – Surface water beneficial uses include contact and non-contact recreation, biological habitats of special significance, estuarine habitat, wildlife habitat, sensitive species habitat, marine habitat and habitat for migratory species.

Water Quality Objectives

Water quality objectives identified in the Basin Plan are based on established beneficial uses, and are defined as "the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses." Water quality objectives are thus derived from beneficial uses, which are based on the ability of given water sources (in terms of water quality) to safely accommodate specific uses. Accordingly, an individual water source may exhibit poor water quality in terms of the overall types and levels of constituents present, yet still meet the water quality objectives identified in the Basin Plan. Water quality objectives identified for surface and groundwater resources in the project site and vicinity are summarized in Table 2.2-3.

County of San Diego Requirements

The County of San Diego Storm Water Quality Management Ordinance (No. 8394) addresses the control and management of contaminants in storm water discharge. As described in Subchapter 2.1 of this EIR, however, the County Storm Water Ordinance exempts activities operating under a valid RWQCB permit, and is therefore not expected to generate substantial discharge requirements above those identified for NPDES.

Various elements of the San Diego County General Plan include references to protecting water quality (as described in Subchapter 2.1 of this EIR) and preserving major drainages, floodways (i.e., the principal channel of a given drainage) and floodplains (i.e., the limits of inundation for a specific storm event). In keeping with these directives, most construction and development activities in the County of San Diego are subject to drainage and water quality protection requirements in applicable County planning documents and ordinances (e.g., Storm Water, Grading and Resource Protection), as well as the NPDES construction and municipal storm water guidelines noted above under federal requirements. Specifically, the latter requirement entails (among other efforts) discretionary review of proposed development projects by co-permittees (i.e., the County) to ensure compliance with NPDES standards (e.g., through measures such as grading/development controls and BMP requirements).

2.2.2 Thresholds of Significance

Project related impacts associated with drainage and water quality impacts are considered potentially significant if one or more of the following thresholds are exceeded:

1. The project will substantially alter on- or off-site drainage patterns or directions.

2. The project will impact a floodway, mapped 100-year floodplain, alluvial fan, wetland or riparian habitat, or wetland or riparian buffer area.

3. Project implementation will substantially increase on- or off-site surface runoff volumes or velocities.

4. Project grading or clearing will occur within 50 feet of any water course or mapped 100-year floodplain.

5. The project will potentially degrade the water quality of any water course or water body.

6. Project implementation will generate impacts that violate or conflict with any applicable federal, state, or local regulations, ordinances or policies.

The thresholds of significance noted above were developed from several sources, including: the State CEQA Guidelines Environmental Checklist Form; the County of San Diego Environmental Analysis Form; and the County of San Diego Resource Protection Ordinance. These thresholds were utilized because they address the potential concerns relative to flooding, hydrology and water quality.

2.2.3 Analysis of Project Effects and Determination as to Significance

2.2.3a Drainage Alteration Impacts

As shown on Figure 2.2-3, proposed development would be limited to the northwestern portion of the site, with associated runoff routed into three outlet points located along the eastern, southern and western portions of the development footprint. These proposed outlets largely correspond to existing runoff discharge from the site shown on Figure 2.2-2, with no substantial alterations to drainage patterns or courses within the developed portion of the site. Project implementation would also not impact any floodways, mapped 100-year floodplains (FEMA 1997, Hunsaker 2000a), alluvial fans, wetland or riparian habitat, or wetland or riparian buffer areas (refer to Subchapter 2.6, Biological Resources). Based on these conditions, implementing the Proposed Project would not exceed Significance Threshold Nos. 1 and 2 listed above, and no associated significant impacts related to drainage alteration are anticipated.

2.2.3b Runoff Volumes and Velocity Impacts

Calculated 100-year peak storm flows for the Proposed Project design are depicted in cubic feet per second (cfs) on Figure 2.3-3. Overall runoff from the project site would increase by approximately 6.5 percent (14 cfs) over existing conditions, with flows to the east increasing by 6.4 cfs, flows to the south decreasing by 0.1 cfs, and flows to the west increasing by 7.7 cfs (Hunsaker 2000a). The additional flow to the east would enter Lake San Marcos, and would not significantly affect water levels in the lake or associated 100-year floodplain boundaries due to the incremental nature of increased runoff. Flows to the south would decrease slightly due to minor drainage rerouting in the development area, with no associated significant impacts to runoff volumes. Flows to the west would increase overall as noted, although this runoff would exhibit the same flow per area (i.e., 2.2 cfs/acre) as the existing drainage, due to a larger drainage basin (Hunsaker 2000a). Offsite 100-year runoff to the west would be contained within an underground 30-inch diameter reinforced concrete pipe (RCP), with this structure to extend approximately 100 feet to the southwest before daylighting at the previously described ephemeral drainage. This proposed storm drain would adequately convey projected 100-year runoff to the noted drainage, with no associated significant impacts to runoff volumes or associated flooding potential (Hunsaker 2000c).

As described in Subchapter 2.1 (Geology) of this EIR, mitigation for potential erosion and sedimentation impacts will include (among other things) the installation of energy dissipation structures (e.g., riprap aprons) at all three proposed drainage outlet points. This measure would reduce potential project related runoff velocity impacts below a level of significance.

Based on the above discussions, the Proposed Project would result in an incremental increase of off-site runoff but would not exceed Significance Threshold Nos. 3 and 6 (i.e., as related to runoff discharge requirements, refer to Section 2.2.1) listed above, and no associated significant impacts related to runoff volumes and velocities are anticipated.

2.2.3c Water Quality Impacts

Potential project-related water quality impacts are associated with both short-term construction activities and long-term residential use, as described below. These potential impacts are applicable to both surface and groundwater resources. That is, because the Proposed Project would not use or directly affect groundwater resources, potential impacts to groundwater quality are associated with percolation of contaminated surface runoff from the site. No potential water quality impacts related to the occurrence of hazardous materials within the site are anticipated from project implementation. This conclusion is based on the fact that a Phase I Site Assessment (Law/Crandall 1997) conducted for the project site did not identify any hazardous material sites or recommend any additional investigation on site. In the unlikely event that hazardous materials are encountered on site, such deposits would require remediation (e.g., removal and proper off-site disposal) pursuant to existing federal, state and local criteria.

Short-term Construction Impacts

Potential water quality impacts related to project construction include erosion and sedimentation, the on-site use and storage of construction-related hazardous materials (e.g., fuels, etc.), and disposal of extracted groundwater (if required).

Erosion and Sedimentation – Proposed Project grading, excavation and construction activities would increase the potential for erosion and transport of material both within and downstream of the site, as described in Subchapter 2.1 of this EIR (Geology). All downstream waters and associated wildlife habitats could potentially be subject to these impacts, although concerns would be greatest for Lake San Marcos (due to its proximity to the site and intervening steep slopes) and Batiquitos Lagoon (due to its sensitivity). Based on these conclusions, implementation of the Proposed Project would potentially exceed Significance Threshold Nos. 4 and 5 identified above in Section 2.2.2. The project design features, permitting requirements (e.g., NPDES) and mitigation measures described in Subchapter 2.1 were determined to avoid or reduce all erosion and sedimentation impacts below a level of significance. By addressing impacts to erosion and sedimentation, these same proposed and required elements would effectively mitigate related water quality effects. Specifically, the described control/reduction of eroded materials would reduce potential water quality impacts in receiving waters related to turbidity (through direct sediment influx) and introduction of additional contaminants (through provision of surfaces for adsorption of other contaminants) below a level of significance.

Construction-Related Hazardous Materials – Project construction would involve the on-site use and/or storage of hazardous materials such as fuels, lubricants, solvents, concrete, paint, and portable septic system wastes. The accidental discharge of such materials during project construction could potentially result in significant impacts to surface water quality if such materials reach downstream receiving waters, particularly materials such as petroleum compounds which are potentially toxic to aquatic species in low concentrations. Based on these conclusions, project impacts associated with the use and storage of construction-related hazardous materials would potentially exceed Significance Threshold Nos. 4 and 5 identified above in Section 2.2.2.

As described above for erosion and sedimentation and in Subchapter 2.1, preparation and approval of a Storm Water Pollution Prevention Plan (SWPPP) would be required as part of the project NPDES

construction stormwater permit. The SWPPP would be required to address measures to avoid or mitigate effects related to the use and potential discharge of hazardous materials during construction. While detailed measures would be determined during preparation of the SWPPP, the following items from the BMP Handbooks (Stormwater Quality Task Force 1993) would likely be applicable to Proposed Project construction activities: restriction of paving operations during wet weather; use of sediment catchment devices (as described for erosion and sedimentation in Subchapter 2.2) downstream of paving activities; proper containment and disposal of paving wastes and slurry; storage of hazardous materials at least 100 feet from storm drains and water courses; use of covered and/or enclosed storage facilities for hazardous materials; use of berms, ditches and/or impervious liners (or other applicable methods) in material storage and vehicle/equipment maintenance areas to prevent discharge in the event of a spill; placement of warning signs in areas of hazardous material use or storage; marking of drainages and storm drains (or other appropriate locations) to avoid inadvertent hazardous material disposal; provision of safety training for applicable employees in the proper use and handling of hazardous materials, as well as appropriate action to take in the event of a spill; storage of absorbent and clean-up materials where they are readily accessible; proper location and maintenance of trash and wastewater facilities; and posting of regulatory agency telephone numbers and a summary guide of clean-up procedures (as identified in the referenced BMP Handbooks) in a conspicuous location at or near the job site trailer.

Implementation of an approved SWPPP as part of the project General Construction Activity Storm Water Permit would effectively avoid or reduce potential water quality impacts associated with construction-related hazardous materials below a level of significance.

Disposal of Extracted Groundwater – Disposal of groundwater extracted during construction activities (if required) could potentially generate significant short-term impacts to surface water quality through erosion and sedimentation (i.e., through uncontrolled discharge), as well as from the possible occurrence of contaminants in local groundwater aquifers. Under such conditions, the disposal of extracted groundwater could impact downstream surface water quality and associated biological habitats through increased turbidity and the introduction of other contaminants. Based on this conclusion, the disposal of extracted groundwater could potentially exceed Significance Threshold No. 5 identified above in Section 2.2.2.

As previously described under Regulatory Guidelines, the project applicant would be required to obtain an approved NPDES Dewatering Waste Discharge Permit prior to disposal of extracted groundwater. This permit would incorporate applicable BMPs to protect downstream water quality, with the BMP Handbooks (Stormwater Quality Task Force 1993) identifying the following types of measures for disposal of extracted groundwater: use of sediment catchment devices (similar to those described in Subchapter 2.1 for erosion and sedimentation); filtering of groundwater prior to discharge (e.g., with gravel and filter fabric media); testing of extracted groundwater for contaminants prior to discharge; and treatment of extracted groundwater if required (e.g., by conveyance to a municipal wastewater treatment plant). Implementing the measures in an approved NPDES Dewatering Waste Discharge Permit would effectively avoid or reduce potential water quality impacts associated with disposal of extracted groundwater below a level of significance.

Long-term Impacts

Potential long-term water quality impacts associated with use of the site as a residential community include the generation and off-site discharge of urban contaminants.

Generation of Urban Contaminants – As described under Existing Conditions and Tables 2.2-1 and 2.2-2, residential urban development (such as the Proposed Project) typically results in the generation of contaminants such as organic materials; nutrients; metals; petroleum compounds; sediment; pathogens; and chemical pesticides, herbicides and fertilizers. It should be noted, however, that some decrease in the on-site use of chemical pesticides, herbicides and fertilizers would occur relative to a reduction (36.2 acres) in on-site agricultural activity. Urban contaminants accumulate primarily in streets, parking lots and drainage facilities, and are picked up in runoff during storm events. Contaminant loading is notably higher during initial runoff generation (i.e., the "first flush"), and in arid climates (such as southern California) contaminant loading is higher during the first storm event of the rainy season due to accumulation of contaminants during the dry season. Post-development peak 100-year storm runoff from the site is projected to increase by approximately 6.5 percent over existing flows (Hunsaker 2000a), with a corresponding increase in runoff loading potential. The transport of urban contaminants from the project site to downstream receiving waters could result in significant water quality impacts related to increased turbidity, oxygen depletion and toxicity to attendant species. These potential effects would be of most concern for Lake San Marcos (due to its proximity and downslope location) and Batiquitos Lagoon (due to its sensitivity). Based on the above conclusions, the Proposed Project would potentially exceed Significance Threshold No. 5 identified above in Section 2.2.2.

The proposed desilting basin (refer to Figure 2.2-3) would provide some reduction of off-site urban contaminant discharge in east-flowing runoff. Specifically, urban contaminants would accumulate with sediment in the basin and would be removed and properly disposed of during facility maintenance. Properly designed and maintained basins of this type typically remove up to 65 percent of suspended solids, although the efficiency of such basins for removing urban contaminants is variable with factors such as basin design and individual contaminants present (Table 2.2-4). (Currently, there are no RWQCB criteria or thresholds for acceptable removal of suspended solids.) In addition to the desilting basin, the project applicant is proposing to reseed the canyons extending down from the proposed eastern and southern storm drain outlets, as described in Chapter 1.0, Section 1.1.3. Reseeding of native (coastal sage scrub) species would encourage additional long-term vegetation cover and associated sediment/ contaminant filtering in the noted canyons.

As previously described above under Regulatory Guidelines, the Proposed Project would require conformance with NPDES municipal stormwater and urban runoff guidelines. These guidelines require new development to meet applicable numeric and qualitative water quality runoff discharge criteria (as described above in Section 2.2.1). The County, as the applicable co-permittee under these requirements, would review the Proposed Project design to ensure conformance with applicable NPDES requirements. The BMP Handbooks (Stormwater Quality Task Force 1993) provide detailed recommendations to minimize municipal contaminant generation and prevent the off-site transport of such materials in associated runoff. Specifically, these include both structural and non-structural measures such as filters, basins, public education and source control programs. A number of site-specific measures related to identified potential urban contaminant effects are included as mitigation below in Section 2.2.4. These measures are derived from the noted BMP Handbooks urban runoff guidelines and NPDES municipal permit criteria (among other sources) and include a range of prevention and filtering techniques potentially applicable to the Proposed Project. Specifically, these include structural elements such as the use of infiltration, vegetated and/or media filters, oil/water separators and specialty filters (e.g., Fossil Filters™ and Vortechs™ systems), as well as non-structural efforts such as source control. Infiltration and vegetated/media filters exhibit variable degrees of contaminant removal as shown in Table 2.2-4. Fossil Filters™ use a combination of filtering media (including amorphous alumina silicate) and reportedly remove approximately 99 percent of diesel and motor oil, and 55 to 65 percent of gasoline (KriStar Enterprises, Inc. 2000). Vortechs™ systems use a site-specific combination of filtering and centrifugal motion to reportedly remove over 80 percent of sediment and associated contaminants during

a "first flush" precipitation event (Vortechnics 1995). The efficiency levels of non-structural measures (e.g., public education, proper use and storage, and illegal dumping controls) are more difficult to assess, as they are dependent on less tangible and controllable elements such as public participation. Such efforts are nevertheless an important element in an overall program to reduce the off-site discharge of urban contaminants.

The mitigation measures provided in Section 2.2.4 would compliment the above described project design elements and are intended to reflect the NPDES municipal permit requirements. The combination of these efforts is considered sufficient to meet all applicable regulatory guidelines and reduce potential project related water quality impacts from urban contaminants below a level of significance. If it is determined during project review under NPDES municipal runoff guidelines that additional or alternative urban contaminant measures would be more appropriate than those identified in this analysis, the directives provided during NPDES review should take priority.

Due to the previously described requirements (and related project design measures) for conformance with applicable regulatory requirements, the Proposed Project is not expected to exceed Significance Threshold No. 6 identified above in Section 2.2.2.

2.2.4 Mitigation Measures

The following measures will be implemented in addition to all Proposed Project design elements (e.g., desilting basin, storm drains, reseeding canyons) and permitting requirements for mitigation of Impact No. 2.2.3c. The combination of these efforts, along with the mitigation measures listed in Section 2.1.4, are sufficient to avoid or reduce all potential project related water quality impacts below a level of significance. The project applicant will be responsible for the implementation and installation of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential homeowners' association (HOA).

1. Contaminant filtering devices shall be installed by the project applicant at appropriate storm drain inlets. The exact number, location and nature of these devices shall be determined by the project engineers as part of the project site drainage system design (and in conformance with NPDES municipal stormwater permit requirements). Specific filtering methods may include devices such as media filters, Fossil Filters™, Vortechs™ systems, and oil/water separators. The project drainage system design shall be submitted to the County for review and approval (pursuant to NPDES guidelines) prior to implementation. Long-term monitoring and maintenance of runoff filtering systems shall be the responsibility of the project site HOA. As part of this process, the HOA may elect to conduct regular water quality testing to assess the effectiveness of structural water quality measures. Based on the results of such testing, long-term requirements may potentially be modified to reduce or eliminate filtering devices, if warranted (i.e., if unfiltered runoff is of adequate quality). The ultimate determination of such long-term requirements would be made by the County and San Diego RWQCB, pursuant to NPDES municipal stormwater and urban runoff guidelines.

2. The project applicant shall incorporate infiltration areas or devices into the project design where necessary and to the maximum extent practicable. Specifically, this may include efforts such as the use of unpaved swales in common areas and porous pavement in applicable locations. The project applicant shall minimize all directly-connected impervious surfaces and reduce the use of impervious surfaces in project design wherever feasible.

3. The project site HOA shall fund and implement a program for public education regarding urban contaminant generation. Specific elements of this program may include items such as adoption and distribution (e.g., through newsletters) of HOA guidelines regarding proper use and disposal of toxic and hazardous materials (e.g., paints, pesticides, herbicides, fertilizers and detergents); sponsorship of toxic and hazardous material collection programs; and use of signs and/or storm drain stencils to provide warnings on illegal contaminant disposal.

4. The project site HOA shall fund and implement a program to minimize the generation of urban contaminants from common landscaped areas. Specific elements of this program shall include: eliminating irrigation runoff; avoiding or minimizing the use of chemical pesticides, herbicides and fertilizers; and recycling vegetation waste.

5. The project site HOA shall fund and implement a street sweeping program to maximize the removal of fine-grained particles. Specific elements of this program shall include the prohibition of on-street parking during cleaning hours, the use of low operating speeds (not exceeding 5 miles per hour) for street cleaning equipment, and proper scheduling of street sweeping activities (e.g., prior to commencement of the rainy season).

2.2.5 Conclusions

Drainage Alteration/Runoff Volume and Velocity

The Proposed Project would not result in any significant impacts related to drainage alteration or increased runoff volumes and velocities. This conclusion is based on the inclusion of Proposed Project design features, as well as the fact that mitigation for potential erosion and sedimentation impacts (as described in Subchapter 2.1 of this EIR) will include the installation of energy dissipation structures at all three proposed drainage outlet points.

Water Quality

Implementation of the Proposed Project would result in potentially significant water quality impacts related to long-term generation of urban contaminants. The Proposed Project design contains a number of elements that would partially avoid or reduce these effects (e.g., a proposed desilting basin), and the project will be subject to review and approval pursuant to applicable regulatory guidelines. These considerations, combined with the mitigation measures identified in this analysis, would avoid or reduce all identified water quality impacts below a level of significance, and would allow the Lake San Marcos Estates project to conform with all applicable regulatory guidelines.

Table 2.2-1
SUMMARY OF CONTAMINANT SOURCES
FOR URBAN STORM WATER RUNOFF

CONTAMINANT	CONTAMINANT SOURCES
Sediment and Floatables	Streets, lawns, driveways, roads, construction activities, atmospheric deposition, drainage channel erosion
Pesticides and Herbicides	Residential lawns and gardens, roadsides, utility right-of-ways, commercial and industrial landscaped areas, soil wash-off
Organic Materials	Residential lawns and gardens, commercial landscaping, animal wastes
Metals	Automobiles, bridges, atmospheric deposition, industrial area, soil erosion, corroding metal surfaces, combustion processes
Oil and Grease/Hydrocarbons	Roads, driveways, parking lots, vehicle maintenance areas, gas stations, illicit dumping to storm drains
Bacteria and Viruses	Lawns, roads, leaky sanitary sewer lines, sanitary sewer cross-connections, animal waste, septic systems
Nitrogen and Phosphorus	Lawn fertilizers, atmospheric deposition, automobile exhaust, soil erosion, animal waste, detergents

Source: U.S. Environmental Protection Agency (EPA) 1999.

Table 2.2-2
TYPICAL CONTAMINANT LOADINGS IN RUNOFF FOR VARIOUS URBAN LAND USES
(lbs/acre-year)

LAND USE	TSS	TP	TKN	NH_3 - N	NO_2 + NO_3 - N	BOD	COD	Pb	Zn	Cu
Commercial	1000	1.5	6.7	1.9	3.1	62	420	2.7	2.1	0.4
Parking Lot	400	0.7	5.1	2	2.9	47	270	0.8	0.8	0.04
HDR	420	1	4.2	0.8	2	27	170	0.8	0.7	0.03
MDR	190	0.5	2.5	0.5	1.4	13	72	0.2	0.2	0.14
LDR	10	0.04	0.03	0.02	0.1	N/A	N/A	0.01	0.04	0.01
Freeway	880	0.9	7.9	1.5	4.2	N/A	N/A	4.5	2.1	0.37
Industrial	860	1.3	3.8	0.2	1.3	N/A	N/A	2.4	7.3	0.5
Park	3	0.03	1.5	N/A	0.3	N/A	2	0	N/A	N/A
Construction	6000	80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

HDR = High Density Residential; MDR = Medium Density Residential; LDR = Low Density Residential.
N/A = Not available; insufficient data to characterize holdings.
TSS = Total suspended solids; TP = Total Phosphorus; TKN = Total Kjeldahl Nitrogen; NH_3 – N = Ammonia Nitrogen; NO_2 + NO_3 – N = Nitrate + Nitrite; BOD = Biochemical Oxygen Demand; COD = Chemical Oxygen Demand; Pb = Lead; Zn = Zinc; Cu = Copper.
Source: EPA 1999.

Table 2.2-3
SURFACE AND GROUNDWATER QUALITY OBJECTIVES
FOR APPLICABLE AREAS AND SUBAREAS OF THE CARLSBAD HYDROLOGIC UNIT[1]

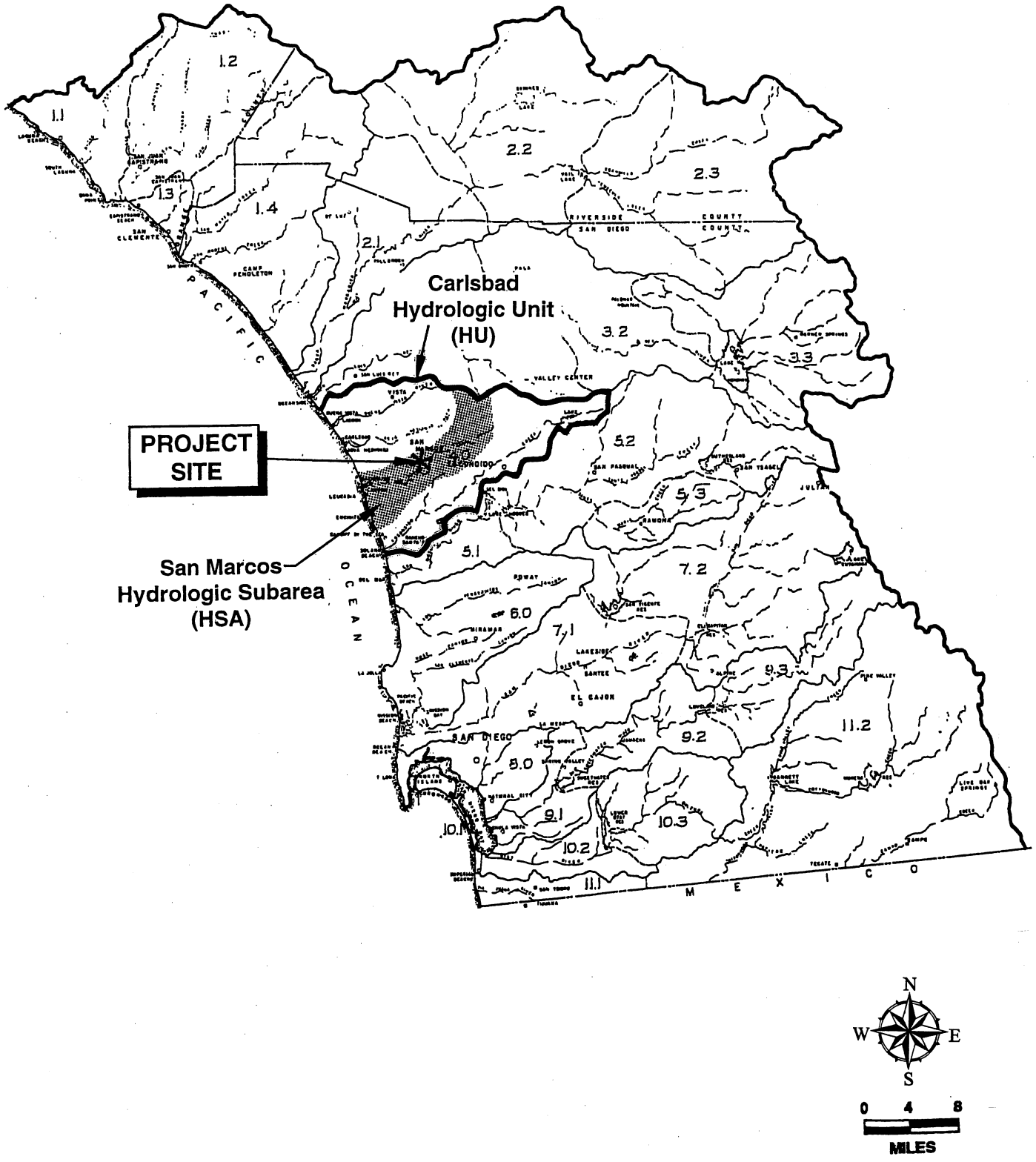
SURFACE WATER												
SAN MARCOS HA (including Batiquitos Lagoon)												
Constituent (mg/L or as noted)												
TDS	**Cl**	**SO_4**	**% Na**	**N&P**	**Fe**	**Mn**	**MBAS**	**B**	**Odor**	**Turb NTU**	**Color Units**	**F**
500	250	250	60	---[2]	0.3	0.05	0.5	0.75	None	20	20	1.0
GROUNDWATER												
SAN MARCOS HA[3]												
Constituent (mg/L or as noted)												
TDS	**Cl**	**SO_4**	**% Na**	**NO_3**	**Fe**	**Mn**	**MBAS**	**B**	**Odor**	**Turb NTU**	**Color Units**	**F**
1,000	400	500	60	10	0.3	0.05	0.5	0.75	None	5	15	1.0
BATIQUITOS HSA[3,4]												
Constituent (mg/L or as noted)												
TDS	**Cl**	**SO_4**	**% Na**	**NO_3**	**Fe**	**Mn**	**MBAS**	**B**	**Odor**	**Turb NTU**	**Color Units**	**F**
3,500	800	500	60	4.5	0.3	0.05	0.5	2.0	None	5	15	1.0

[1]Concentrations not to be exceeded more than 10 percent of the time during any one-year period.
[2]Shall be maintained at levels below those which stimulate algae and emergent plant growth.
[3]Objectives do not apply west of the eastern boundary of Interstate 5, between Highway 78 and El Camino Real, or to areas draining to Moonlight and Encinitas creeks. Objectives for the remainder of the HA or HSA are as shown.
[4]Objectives apply to areas bounded on the south by the north shore of Batiquitos Lagoon, on the west by the eastern right-of-way boundary of Interstate 5, and on the east by the eastern boundary of El Camino Real.
Abbreviation Key: TDS = total dissolved solids; Cl = Chlorides; SO_4 = Sulfate; Na = Sodium; NO = Nitrate; Fe = Iron; Mn = Manganese; MBAS = Methylene Blue – Activated Substances (anionic surfactant or commercial detergent); B = Boron; Turb = Turbidity (measured in National Turbidity Units [NTU]); F = Fluoride; N&P = Nitrogen and Phosphorus.
Source: RWQCB 1994.

Table 2.2-4
TYPICAL CONTAMINANT REMOVAL EFFICIENCY FOR STRUCTURAL BMPs

BMP TYPE	TYPICAL CONTAMINANT REMOVAL (percent)				
	Suspended Solids	Nitrogen	Phosphorus	Pathogens	Metals
Dry detention basins	30 – 65	15 – 45	15 – 45	< 30	15 – 45
Retention basins	50 – 80	30 – 65	30 – 65	< 30	50 – 80
Constructed wetlands	50 – 80	< 30	15 – 45	< 30	50 – 80
Infiltration basins	50 – 80	50 – 80	50 – 80	65 – 100	50 – 80
Infiltration trenches/dry wells	50 – 80	50 – 80	15 – 45	65 – 100	50 – 80
Porous pavement	65 – 100	65 – 100	30 – 65	65 – 100	65 – 100
Grassed swales	30 – 65	15 – 45	15 – 45	< 30	15 – 45
Vegetated filter strips	50 – 80	50 – 80	50 – 80	< 30	30 – 65
Surface sand filters	50 – 80	< 30	50 – 80	< 30	50 – 80
Other media filters	65 – 100	15 – 45	< 30	< 30	50 – 80

Source: EPA 1999.

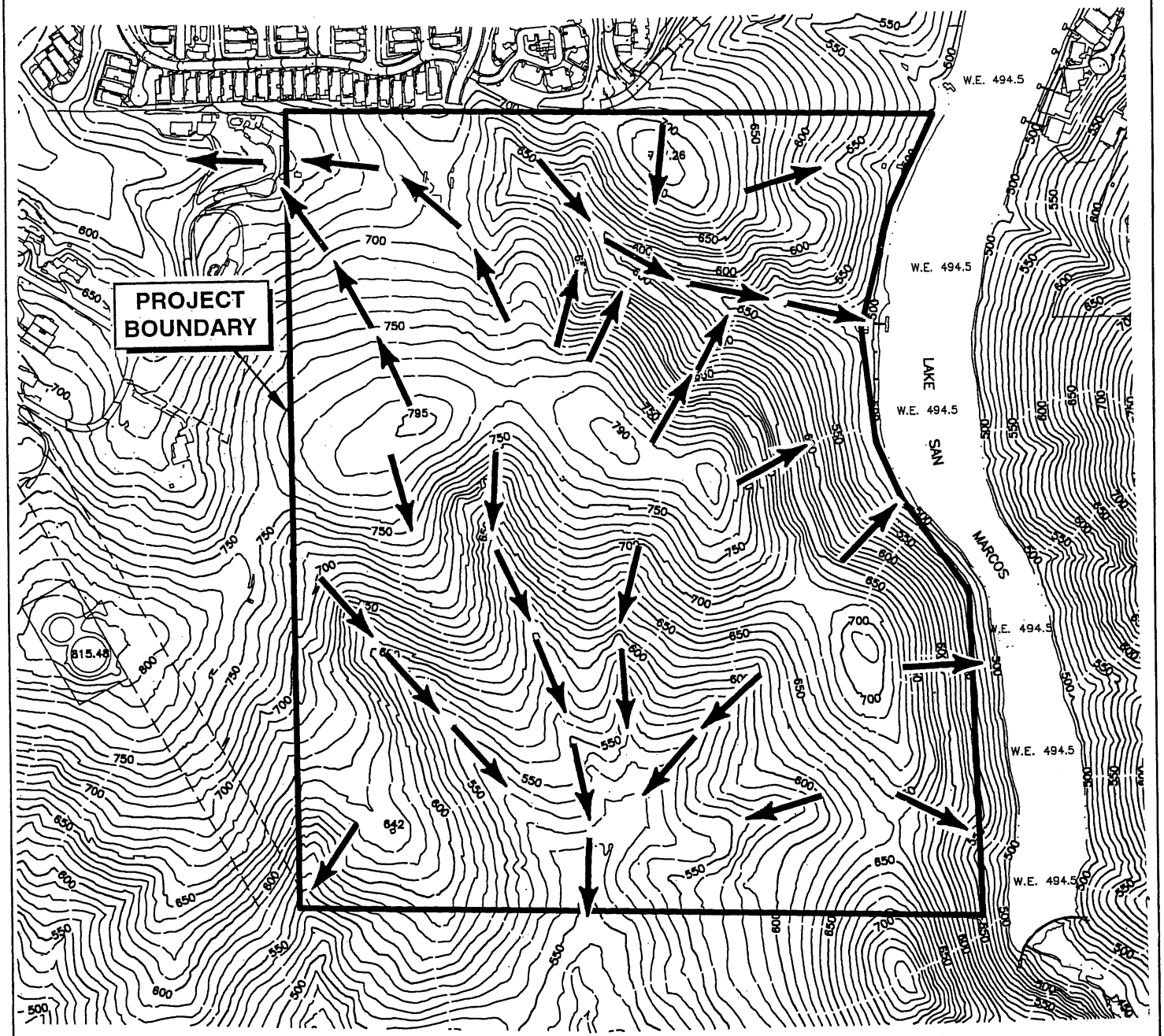


Hydrologic Designations

LAKE SAN MARCOS ESTATES

Figure 2.2-1

HELIX



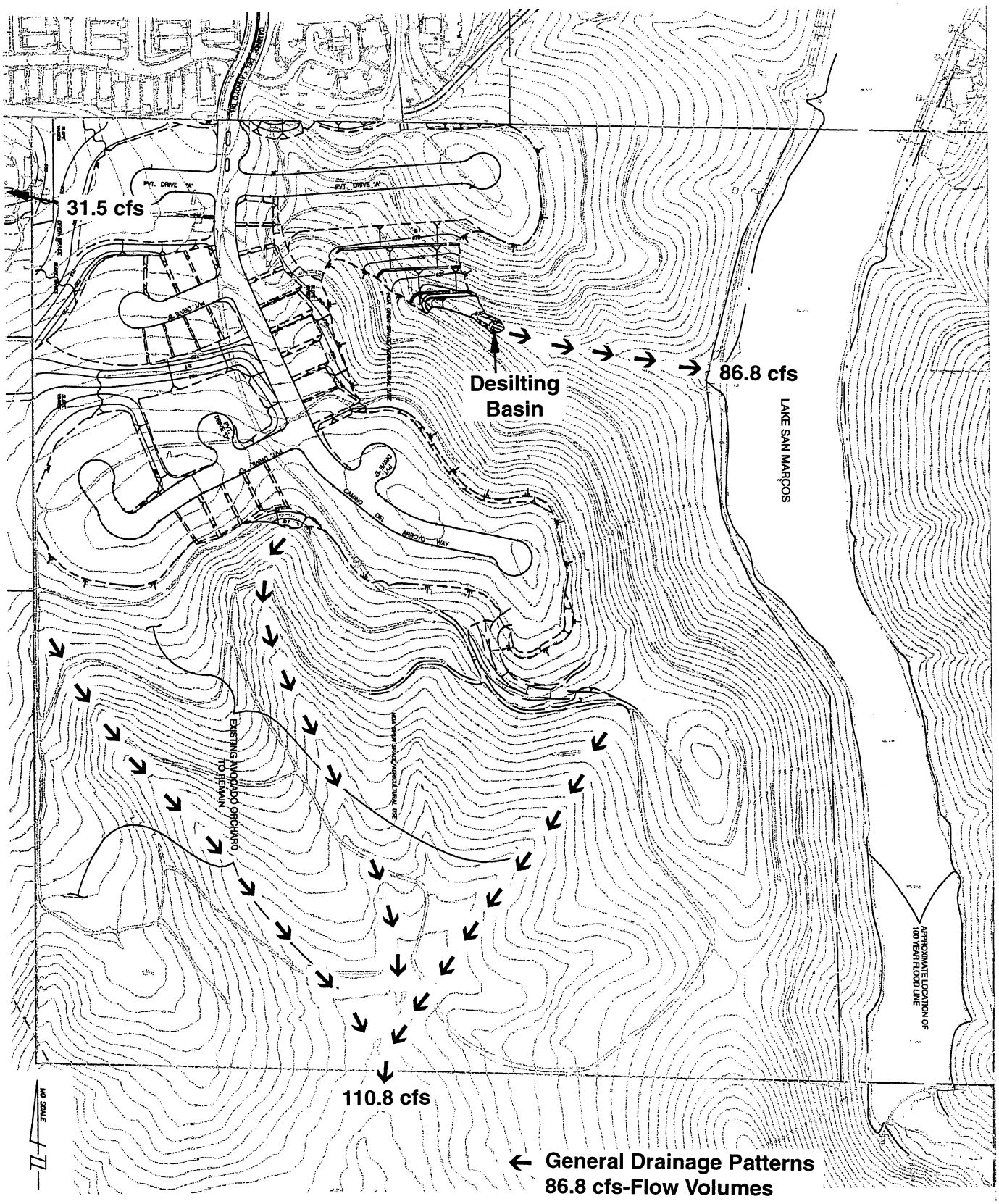
Scale: 1" = 500'
Source: Hunsaker & Associates, August 1999

Existing Site Drainage Patterns

LAKE SAN MARCOS ESTATES

Figure 2.2-2

HELIX



Source: Hunsaker & Associates, 2001

Project Site and Drainage Plan

LAKE SAN MARCOS ESTATES

Figure 2.2-3

HELIX

2.3 Biological Resources

The following analysis of biological resource issues is focused on potential project related impacts to the presence or absence of sensitive biological habitats, plants, and animal species as identified in the project NOP dated May 25, 2000. The evaluation of potential biological resource impacts incorporates the results of the February 22, 2001 *Biological Technical Analysis for the Lake San Marcos Estates Project* prepared for this project. Applicable information for this study is summarized below, with the complete report included in Appendix E of this EIR.

Methodology

Preliminary vegetation mapping was performed by Dawn Dickman of the County of San Diego DPLU. An additional field survey was conducted at the site to verify vegetation mapping, perform general botanical and zoological surveys and to determine the presence of rare plant and animal species. Field work was conducted on June 28, 2000 by Dr. Derek Langsford from 8:00 AM to 12:00 PM. Conditions were initially cloudy with no wind and the temperatures were in the high 60s deg. F. The clouds cleared by mid-morning and temperatures rose into the low 80s deg. F.

Vegetation was mapped on a topographic map of 1"=100' scale. An aerial photograph was used as a reference. Vegetation was mapped 100 feet beyond the property boundary pursuant to County of San Diego Biological Mapping Requirements.

Wildlife signs and observations were noted during the surveys. Potentially occurring species were determined through a habitat-based analysis and by consulting the known distribution of sensitive species in the project area.

Nomenclature for this report is from Hickman ed. (1993) for plants; Holland (1986) for vegetation communities; Collins (1997) for reptiles and amphibians; the American Ornithologists' Union (1998, as updated) for birds; and Jones et al. (1997) for mammals. Sensitive animal and plant status is taken from the California Department of Fish and Game (1999a) and (1999b), as updated.

2.3.1 Existing Conditions

Vegetation

The site supports a single native vegetation community, Diegan coastal sage scrub. The majority of the site has been previously disturbed by agricultural operations and presently consists of non-native orchard agriculture. In addition, there is some disturbed habitat and developed areas on site. Refer to Figure 2.3-1 for the location of habitats described below. Acreages of the different habitats are provided in Table 2.3-1. No wetlands were identified pursuant to federal Clean Water Act, state Fish and Game Code or the County's more inclusive RPO criteria. The canyon in the northeast, where topography is most conducive to creek formation, did not exhibit any characteristics that would define it as a wetland habitat or ephemeral stream.

Diegan Coastal Sage Scrub

Diegan coastal sage scrub is characterized by subshrubs with relatively shallow root systems and open canopies. On site, the Diegan coastal sage scrub appears to be recovering from a 1996 wildfire, and is dominated by three shrub species: laurel sumac (*Malosma laurina*), bush mallow (*Malacothamnus fasciculatus* var. *fasciculatus*), and black sage (*Salvia mellifera*). Deerweed (*Lotus scoparius*), California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*) and monkey flower (*Mimulus aurantiacus*) were also present. The mix of species varies from north to south. At the northern end there are typical coastal sage species. In the canyon in the northeast portion of the property, on the south-facing side, the coastal sage appears disturbed from past clearing or grading activities associated with agricultural operations. In more mesic areas, toyon (*Heteromeles arbutifolia*), coyote bush (*Baccharis pilularis*), and elder (*Sambucus mexicana*) are more prevalent. At the southern end of the coastal sage strip, white coast ceanothus (*Ceanothus verrucosus*) is prevalent and combines with chamise (*Adenostoma fasciculatum*) off site to form patches of southern mixed chaparral.

Disturbed Habitat

Disturbed habitats, under the County's definition, can only be identified as such if an area meets certain criteria. The identification requires that permanent disturbance has eliminated future biological value for most species including foraging potential for raptors, and that the land does not support natural vegetation. On site, the disturbed habitat within the coastal sage scrub consists of an extension of an unpaved grove service road that extends into the coastal sage scrub in the southeast portion of the property. The road ends at the property boundary, has been graded and maintained, is continuously disturbed by use, does not support any natural vegetation, and is of low to no value for sensitive wildlife.

Orchard Agriculture

The majority of the site has been cultivated for avocado production since the 1970s. Avocado orchards with associated agricultural facilities (equipment storage and packing buildings) and operations (grove service roads and irrigation lines) cover all but the lower slopes of the site that lead down to the lake. As described in Section 1.4, Environmental Setting, some portions of the orchard, in the southwestern portion of the site, are being rejuvenated by severe pruning, while other portions are being replaced with fungus-resistant trees. These trees will continue to be part of the active avocado farming operation. Ground squirrels (*Spermophilus beecheyi*) were observed foraging at the edges of the orchard. Crows (*Corvus brachyrhyncos*) were also observed using the orchard. Some exotic grasses (*Bromus* sp.) and ruderal species (*Picris echioides*) were present among the avocado trees.

Developed

Developed land is that where permanent structures and/or pavement have been placed, preventing the growth of vegetation, and where associated land has been landscaped or cleared for fire safety purposes. On site, the edges of the recreational area that are in the northeast fringe of the site are considered developed due to the presence of a graded access road, landscaping, cabanas, barbecues, and fire pits. A proposed recreational easement would include a covered picnic area that lies on the property. The lake access road ends in a cluster of eucalyptus trees on the central eastern fringe of the site. The agricultural support buildings have been included in the agricultural habitat designation.

Plants

A general list of plant species observed during the June 2000 field survey is provided in Appendix A of the Biological Technical Analysis.

Sensitive Plant Species

One sensitive plant species was found on site, the white coast ceanothus (*Ceanothus verrucosus*). This plant species, typically found in chaparral habitat, was prevalent in the coastal sage habitat in the southern end of the site, as well as off site to the south. Two individuals were observed in the northern portion of the site, within the large canyon. The white coast ceanothus has the following status with federal, state and local resource agencies: a federal species of concern; California Native Plant Society (2) = rare, threatened, or endangered in California but more common elsewhere; R-E-D 1-2-2; MSCP covered species for which the County and City of San Diego have take authorization; MHCP-target species (TS) being evaluated for coverage; and County Group B = rare, threatened or endangered in California but more common elsewhere. Please refer to Table 2.3-2 and Appendix C the Biological Technical Report (Appendix E) for the status codes and regional distribution characteristics.

Although only one sensitive plant species was located on site, twenty-seven sensitive plant species have some potential to occur on site and are listed Table 2.3-2.

Animals

A list of all animal species observed on site is presented in Appendix B of the Biological Technical Analysis (Appendix E). No sensitive animal species were observed on site during the field survey.

Discussion of sensitive animal species which were not detected but have the potential to occur on site is provided in Table 2.3-3, along with their federal, state, and county designations. In addition, the Multiple Habitat Conservation Program (MHCP) has identified a group of priority animal species (SANDAG 1997), which includes those listed or proposed for listing at the federal or state levels, or that were designated as Natural Community Conservation Program (NCCP) target species.

Regional Conservation Planning

In terms of regional conservation programs, the property is within an area that the County has enrolled in the NCCP program. The subarea plan for this area is currently in the preliminary stages of preparation and has not been adopted as of this date. The City of San Marcos' MHCP planning area is located immediately adjacent to the County "island" in which the project site is located. The City's MHCP Subarea Plan has also not yet been adopted; however, a proposed "hard line" preserve boundary has been mapped immediately to the south and east of the project site. It is believed the habitat on site would not serve as a core area for any future county NCCP plan because the project site is not considered a major wildlife corridor. However, since the County has not defined any potential core areas or corridors for the north county NCCP subarea, and the City of San Marcos has not adopted a subarea plan for the MHCP, the project was reviewed for conformance with NCCP Guidelines, CEQA, and the County's RPO for protection of sensitive resources and wildlife corridors in a regional context.

2.3.2 Thresholds of Significance

Criteria for Determining Significance

The County of San Diego identifies the following potential project impacts as significant pursuant to the County's RPO:

- Disturbance of land which supports unique vegetation communities or the habitats of rare or endangered species
- Direct loss of wetlands or riparian habitat
- Disturbance to areas that support a viable population of rare and sensitive species or which serve as wildlife corridors
- Direct loss of any coastal sage scrub
- Noise levels greater than 60 dB(A) L_{eq} at the outside perimeter of gnatcatcher habitat if it would affect gnatcatcher breeding

Further, CEQA Guidelines, Section 15382 defines "significant effect on the environment" as a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, water, flora, fauna, etc." The finding of significance is based on certain criteria outlined in the CEQA Guidelines defining endangered, rare or threatened species (Section 15380), evaluation of technical data (e.g., species data and sensitivity status), and professional judgment and experience. In addition to the county and CEQA guidelines criteria, a significant impact was identified if the project would:

- adversely affect a federal- or state-listed species;
- adversely affect a County sensitive animal or plant species (considered by the County to meet the criteria of CEQA Section 13850) or habitat supporting such species;
- impact raptor foraging and/or nesting habitat; and/or
- conflict with long-term regional or subregional conservation goals.

2.3.3 Analysis of Project Effects and Determination as to Significance

The following section assesses and determines the significance of potential direct and indirect impacts associated with the proposed Lake San Marcos Estates project.

Direct impacts were determined based on the limits of grading and proposed development shown in Figure 1.1-3 (a 1" to 100' scale Tentative Map was utilized to determine and quantify impacts). Brush management is generally not required for this project because the development will occur within an avocado orchard, which provides a fire buffer to residences; the orchard would also buffer the Biological Open Space from the development. Off-site improvements, including a storm drain leaving the northwest portion of the site, a potable waterline and pump station, and an emergency sewer and fire access easement, are located in developed and disturbed habitat.

2.3.3a Sensitive Species Impacts

While presence of coastal California gnatcatchers should be assumed unless surveys are performed, impacts to only 0.3 acre of coastal sage scrub habitat would not result in a significant negative impact to gnatcatchers, provided clearing and grading of occupied gnatcatcher habitat is avoided during the gnatcatcher breeding season. In addition, the preservation of 13.7 acres of coastal sage scrub on site would fully mitigate any impacts to gnatcatcher habitat in accordance with County 4(d) Rule Mitigation Guidelines for the HLP process. A protocol survey may be required pursuant to obtaining a Habitat Loss Permit from the County, however, this may be waived with concurrence from the USFWS and CDFG considering the small impact to habitat, the 13.7 acres of coastal sage scrub that will be preserved, and the mitigation measure of performing protocol surveys immediately prior to grading, blasting or construction. No impacts to other sensitive animal species that may occur on site are considered significant due to the small acreage of natural habitat being impacted.

The Migratory Bird Treaty Act makes it illegal to "pursue, hunt, capture, kill, attempt to take or kill" any migratory bird or "any part, nest, or egg of any such bird by any means or in any manner." Case law has determined that habitat destruction *per se* is not a "taking" under the Act (Seattle Audubon Society v. Evans [9th Cir., 1991], 952 F2d 297, 303). Further, the Act was created with the intention to regulate hunting of various types of migratory birds (U.S. v. Olson [DC Ky, 1941], 41 F. Supp. 433). However, destruction of active nests of migratory birds, especially of raptors, is generally considered to be covered by the Act. While raptors and owls may be seen in the vicinity of avocado groves, it is unlikely they would use the low-canopy trees for nesting, especially considering the preferred tree species (such as *Quercus* spp.) for nesting by regional raptors do not include avocado trees. Should a raptor use a grove tree, it would likely do so at the edges of a grove near more open ground where take-off from a tree would not be impeded by branches and foliage and where open habitat could be observed by the bird (Scott Taylor, personal communication). Raptors may use dead avocado trees as perch sites for hunting, however, use of such trees for nesting is highly unlikely. Provided surveys are performed to check for presence of nesting raptors immediately prior to clearing and grading, no direct impacts to animal species are expected.

The project proposes mitigation to satisfy all existing state, federal and County regulations. Refinement of proposed mitigation measures is not anticipated from resource agencies during the Habitat Loss Permitting process as the 4(d) findings have been made for this project and the resource agencies have completed their review and have not recommended additional measures as part of that process.

2.3.3b Direct Habitat Impacts

The proposed project would impact 36.2 acres of the site (Table 2.3-4). Of this 36.2 acres, 0.3 acre of direct impacts to coastal sage scrub would occur, most of which is disturbed coastal sage scrub habitat. The remaining development area would remove approximately 35.9 acres of agriculture. The 0.3-acre impact to coastal sage scrub is due to a desilting basin and fill slope located at the northwest end of the canyon. No impacts will occur from fuel modification as the habitats and development are buffered by avocado orchard which fulfills the local fire marshals requirements. No wetlands or riparian habitat would be directly affected by the project.

Approximately 13.7 acres of coastal sage scrub are proposed to be retained on site within a Biological Open Space Easement. The proposed Open Space Easement is separated from the development by an average of 300 feet of avocado orchard (which will remain), and the proposed habitat easement is steeply sloped, which would be a disincentive for people to walk through it. While these factors may help reduce potential impacts to biological resources from edge effects, additional mitigation is recommended to reduce potential impacts to below a level of significance (refer to Section 2.3.4d, #2).

Long-term impacts to coastal sage scrub are considered significant and subject to mitigation no matter the degree to which this vegetation community will be impacted. As a result, the 0.3-acre impact on this site is considered a significant impact to this habitat.

2.3.3c Direct Plant Impacts

The proposed project would impact one individual white coast ceanothus (*Ceanothus verrucosus*) located within the canyon in the northeast portion of the site (Figure 2.3-1). More than 100 individuals were observed in the southeastern corner of the site with a patch of approximately 500 individuals being observed immediately off site to the south of this grouping (Figure 2.3-1). The species is documented as being widespread in the western portion of San Diego County. As a result, impacts to only one individual of this species, a federal species of concern, is not significant.

2.3.3d Indirect Impacts

Indirect long and short term impacts to biological resources located on or off site but adjacent to the proposed development may occur due to project construction and/or residential development. Potentially significant indirect impacts anticipated include:

- decreased water quality (through sedimentation, urban contaminants, or fuel release, for example)

- habitat disturbance associated with people, vehicles, fuel management zones, and colonization by non-native plant species

- night lighting associated with residences and drives. The proposed project design leaves an approximately 300-foot buffer of avocado orchard between the development and proposed Biological Open Space Easement. Both the avocado orchard and the biological open space area slope steeply downwards from the proposed development. In addition, all roads to and within the development are lined by proposed residences so street lighting of any habitat will be shielded by those homes. As a result, light impacts to habitat within the biological open space would not be significant. Habitat off site, north of the northeastern portion of the proposed project, will not be significantly affected by night lighting because of the presence of an 8-foot berm between the building pads and the habitat. The downhill slope from the berm also reduces the intensity of any light that may breach the berm. The habitat immediately off site to the west of the proposed project is a small fragment of habitat surrounded by development and orchards that again slope away from the proposed home sites. Much of this area is currently subject to disturbance from fire clearing for the homes that are to the north, west and southeast of the fragment, and edge effects including night lighting from these existing residences. Night lighting from the proposed project in this area would not significantly further degrade this habitat. Although there is no significant impact, a condition of approval is recommended whereby residents will be informed through the HOA that exterior lighting should be shielded and directed away from habitat adjacent to their home sites. In addition, lighting within the residential development shall be of the lowest illumination allowed for human safety, and shall be selectively placed, shielded, and directed away from any on- or off-site habitats. As a result of these factors and precautionary conditions of approval, effects from night lighting are not expected to be significant and no sensitive species are expected to be impacted.

- fugitive dust generated during construction activities, and

- short-term construction noise from grading, drilling and blasting. Proposed site preparation and grading is located on average over 300 feet away from the native habitat, buffered in between by retained avocado groves. In addition, the biological open space easement is located at a lower elevation than the remaining avocado orchards which would help attenuate (absorb) grading noise. However, should multiple pieces of construction equipment be operating at any one time, there would be a potential for significant short-term noise impacts to sensitive species, particularly if breeding gnatcatchers are located within 500 feet of the limits of grading.

  The March 6, 2001 Construction Noise Impact Analysis (Appendix F) includes an assessment of potential impacts to sensitive avian species, specifically the potential to impact breeding pairs of California gnatcatchers. The noise standard designated to protect breeding gnatcatchers or similarly noise-sensitive birds, is 60 dB L_{eq}. (dB L_{eq} is described as the energy equivalent average of noise whereby noise events of varying amplitude and frequency are translated into one average value that has the same acoustical energy as the sum of all the individual noise events.) According to the noise analysis in Appendix F, the noise generated from projected construction activities (drilling, blasting, clearing and grading) results in a 60 dB L_{eq} level at 1,000 feet from the centroid of grading activities and equipment movement. The theoretical 60 dB L_{eq} distance of a drilling machine is slightly over 1,000 feet. If breeding gnatcatchers are shown to be present in on-site sage scrub habitat during construction operations, noise protection will be required where construction activities occur less than 1,000 feet away from the documented gnatcatchers. Two primary methods are available to reduce potential noise impacts to breeding avian species to below the 60 dB threshold. The two options for mitigation include scheduled avoidance or installation of temporary noise barriers, as described under mitigation measure 2.3.4d.

2.3.3e Regional Conservation Efforts

The project will impact only 0.3 acre of coastal sage scrub habitat. The conservation of the remaining 13.7 acres of coastal sage scrub ensures that regional conservation planning is not precluded or significantly impacted by the project.

2.3.4 Mitigation Measures

The following mitigation measures address potentially significant direct and indirect impacts from the proposed project.

2.3.4a Sensitive Species Impacts

1. To prevent potential impacts to nesting raptors, a County–certified, qualified ornithologist, will perform a survey to be completed not more than one week prior to initiation of blasting, clearing and grading activities, and based on the survey, certify in writing to the County Department of Planning and Land Use that there are no nesting raptors on the project site. If the ornithologist's survey locates nesting raptors, it will be certify in writing to the County that an area not less than 800 feet radius from the nest(s) has been flagged to identify a construction-free zone to avoid disturbance to nesting raptors.

2.3.4b Direct Habitat Impacts

1. The project would significantly impact coastal sage scrub habitat through direct loss of 0.3 acre. NCCP guidelines determine the quality of habitat present and the 4(d) Rule Mitigation Guidelines for the HLP process determine the appropriate mitigation ratio. Following these guidelines, the Proposed Project warrants a 2:1 mitigation ratio for the coastal sage scrub on site. A Biological Open Space Easement, dedicated to the County of San Diego, will be placed on all areas of native vegetation outside the grading impact zone. The Biological Open Space Easement will cover 13.7 acres of habitat that will provide more than the required 2:1 mitigation ratio required for coastal sage scrub impacts and will preserve native habitat and protect any potentially occurring species listed in Tables 2.3-2 and 2.3-3.

2.3.4d Indirect Impacts

1. Water Quality

During project construction, measures shall be implemented to control erosion, sedimentation, and pollution in accordance with the measures listed for Impact 2.1.3a in Section 2.1.4. The lack of wetlands or streambeds means no Clean Water Act 404 permits or Fish and Game Code 1603 Streambed Alteration Agreements are required for this proposed project.

2. Habitat Disturbances

The Proposed Project shall include fencing between the development/remaining orchard and the Open Space Easement. Preserved habitat shall be posted with signs precluding access due to habitat sensitivity and prohibiting dumping. Residents shall be educated in access restrictions, control of domestic animals, prevention of irrigation run-off, and sensitivity of habitats on site within the Biological Open Space Easement.

3. Night Lighting

No significant impacts were identified and therefore no mitigation measures are required. Refer to Section 2.3.3d for the recommended conditions of approval.

4. Noise

Prior to the start of grading, drilling and blasting activities, a certified biologist shall conduct a protocol survey within the native coastal sage scrub to determine if any nesting California gnatcatcher pairs are present. If nesting pairs are located within 500 feet of the proposed limits of grading (includes limits of drilling and blasting), one of the two following mitigation measures shall be implemented:

- Construction activities (drilling, blasting or grading) shall be postponed until after the breeding season ends (breeding season is February 15 through August 15), or

- Temporary noise barriers (earthen berms or solid fencing) shall be erected between the noise source and receiver to reduce the noise to a level that will not disturb nesting gnatcatchers (60 dB L_{eq}). Although it is possible to screen activities and meet the 60 dB L_{eq} standard, it is not possible to generalize a single berm requirement even for an at-grade assumption (i.e., without topographic variations). As noted in Appendix F, noise barrier heights would average 8½ feet. The location and height of the temporary barrier would depend upon the location of where breeding pairs of gnatcatchers are found and upon the distance between the construction noise source and the receiver (breeding pairs). The peak hourly noise level and required berm height to achieve the necessary mitigation are provided in Appendix F, page 9. As shown in Appendix F, the barrier heights vary for every source-receiver distance and for the type of equipment operating near the habitat. In addition, the barrier heights provided assume the noise-source and receiver are at equal grade, which is a worst-case analysis. As mentioned previously, the topography on-site varies significantly and avocado groves will be retained between the limits of grading and the native habitat, contributing to noise attenuation.

  Noise barrier materials would consist of either an earthen berm or plywood fencing, and would be located at the edge of the limits of grading for distances no greater than 200-300 linear feet. As the berms/barriers would be generally north-south in direction, of limited length, and located west of retained avocado orchards, temporary noise berms would not impede wildlife movement within the native habitat on the eastern portion of the site. As noted in the biological resources technical study (Appendix E), the coastal sage scrub on-site does not serve as a major wildlife corridor; local movement of species on-site and to off-site locales to the south would not be impaired by temporary berms located west of the sage scrub and west of retained avocado groves.

Impacts that might occur from noise to non-breeding gnatcatchers are not significant due to the distance from the majority of the impact area to the habitat, the presence of avocado trees which will act as sound buffers, and the habitat being significantly downslope from the impact area. As a result, potential impacts from noise to gnatcatchers will be either not significant (if no nesting pairs are identified), or will be reduced to a level below significance by limiting construction to outside the breeding season or erecting temporary noise attenuation barriers.

5. Fugitive Dust

Dust shall be controlled through the implementation of measures required by the County's grading regulations, including application of water on unpaved, unvegetated surfaces during construction activities.

2.3.5 Conclusions

The proposed Lake San Marcos Estates project site supports mostly avocado orchard agriculture. A narrow band of coastal sage scrub covers the lower slopes of the site, west of Lake San Marcos. One sensitive plant species, white coast ceanothus, was observed in the coastal sage scrub, however several other species are expected to occur but were not observed. California gnatcatchers were not observed and have a low probability of being present. The proposed project would impact 36.2 acres of the 126.1-acre site, with direct biological resource impacts limited to 0.3 acre of coastal sage scrub due to the construction of a fill slope and desilting basin. The remaining 13.7 acres of coastal sage scrub will be placed in a Biological Open Space Easement, dedicated to the County of San Diego. The 13.7 acres of Biological Open Space Easement will reduce impacts to coastal sage scrub to below a level of significance. The detention basin will impact a single individual white coast ceanothus shrub that is not significant. Indirect impacts to surface water quality and from habitat disturbance, nighttime lighting, noise and dust are either not significant or will be mitigated to levels below significance. Overall, the project impacts to biological resources will be fully mitigated by the open space easement included in the project diagram, as well as mitigation measures described herein.

Table 2.3-1
VEGETATION COMMUNITIES ON SITE

VEGETATION COMMUNITY*	ACREAGE
UPLAND	
Diegan Coastal Sage Scrub (32500)	14.0
OTHER	
Disturbed Habitat (11300)	0.03
Orchard Agriculture (18100)	111.6
Developed (12000)	0.5
TOTAL	**126.1**

* Numerical codes are from Holland (1986).

Table 2.3-2
POTENTIALLY OCCURRING SENSITIVE PLANT SPECIES

SPECIES	STATUS*	POTENTIAL TO OCCUR
Orcutt's spineflower (*Chorizanthe orcuttiana*)	FE, CE, CNPS 1B R-E-D 3-3-3 CoSD A, MHCP-PS	Low. This species occurs in closed-cone coniferous forests, chaparral, and coastal sage scrub near the coast, such as at Encinitas.
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT, CE, CNPS 1B R-E-D 3-3-3 CoSD A, MHCP-PS	Low. Occurs in coastal sage scrub, cismontane woodlands, grasslands, and vernal pools with clay soils. Range includes coastal San Diego County to central Baja California. No suitable clay soils present on site.
Encinitas baccharis (*Baccharis venessae*)	FT, CE, CNPS 1B R-E-D 2-3-3 CoSD A, MSCP MHCP-PS	Moderate. Restricted to central coastal San Diego County in chaparral below 1000 feet. A directed search at flowering time in October is required to identify this species.
San Diego thorn-mint (*Acanthomintha ilicifolia*)	FT, CE, CNPS 1B R-E-D 2-3-2 CoSD A, MSCP MHCP-PS	Low. Occurs on clay lenses in open areas. Low potential to occur on site due to there being no grassland or clay soils present.
San Diego ambrosia (*Ambrosia pumila*)	FSC, CNPS 1B R-E-D 3-3-2 CoSD A, MSCP MHCP-PS	Low. Occurs in disturbed areas within chaparral, coastal sage scrub, and grasslands. Would have been detected if present.
Del Mar sand aster (*Lessingia filaginifolia* var. *filaginifolia*)	FSC, CNPS 1B R-E-D 3-2-3 CoSD A, MSCP MHCP-TS	Low. Occurs in sandy and disturbed areas within southern maritime chaparral, and coastal sage scrub. Ranges through San Diego County coastal areas from Carlsbad to Ft. Rosecrans.
Sticky-leaved liveforever (*Dudleya viscida*)	FSC, CNPS 1B R-E-D 3-2-3 CoSD A, MSCP MHCP-TS	Low. Would have been observed if present. Occurs in coastal sage scrub and chaparral of bluffs and rocky cliffs. No rocky outcroppings or bluffs are present on site. Range includes southern Orange and central San Diego counties.
Aphanisma (*Aphanisma blitoides*)	FSC, CNPS 1B R-E-D 2-2-2 CEQA, CoSD A MSCP, MHCP-TS	Low. Typically found in alkaline or sandy areas, coastal bluff scrub, coastal sage scrub in coastal areas below 100 feet. Occurs from Ventura County south to Baja California and on Channel Islands.
Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*)	FSC, CNPS 1B R-E-D 2-2-2 CoSD A, MHCP-TS	Low. Would have been observed if present, little potential habitat for species on site. Occurs in coastal bluff and coastal sage scrub, and grasslands. Found on rocky, often clay or serpentinite soils. Range extends from central California counties into northwestern Baja California.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	FSC, CNPS 1B R-E-D 2-2-2 CEQA, CoSD A MHCP-TS	Low. Found in scattered locations on north-facing slopes and drainages in chaparral below approximately 2,300 feet from the foothills to the coast in Orange and San Diego counties and south into Baja California. Would have been observed if present.
San Diego goldenstar (*Muilla clevelandii*)	FSC, CNPS 1B R-E-D 2-2-2 CoSD A, MSCP MHCP-PS	Low. Found in clay soils on dry mesas and hillsides in coastal sage scrub or chaparral in Southwestern San Diego County and northwestern Baja California. No clay soils found on site.

Table 2.3-2 (cont.)

SPECIES	STATUS*	POTENTIAL TO OCCUR
Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*)	CNPS 1B R-E-D 2-2-2 CoSD A, MSCP	Low. Found in chaparral in Orange and San Diego counties and Baja California between approximately 900 and 3,300 feet in elevation. Tends to occur on peaks. Nearest known locations are in central and south central San Diego County. Would have been observed if present.
Orcutt's brodiaea (*Brodiaea orcuttii*)	FSC, CNPS 1B R-E-D 1-3-2 CoSD A, MSCP MHCP-TS	Low. Would have been observed if present. Occurs in closed-cone coniferous forests, chaparral, cismontane woodlands, grasslands, and vernal pools on clay soils. Range extends from Riverside and San Bernardino counties through San Diego County into Baja California.
Many-stemmed dudleya (*Dudleya multicaulis*)	FSC, CNPS 1B R-E-D 1-2-3 CEQA, CoSD A	Low. In chaparral, coastal sage scrub and grass-lands but only known from San Onofre in San Diego County. Would have been observed if present.
California adolphia (*Adolphia californica*)	CNPS 2 R-E-D 1-2-1 CoSD B	Low. Found in clay soils in dry canyons and washes in coastal sage scrub and chaparral below 1,000 feet in elevation in western San Diego County and northwestern Baja California. Site has no clay soils. Would have been observed if present.
Palmer's grapplinghook (*Harpagonella palmeri*)	FSC, CNPS 2 R-E-D 1-2-1 CoSD B, NCCP, OSS	Low. Occurs in chaparral, coastal sage scrub, and grasslands on clay soils. Range includes southern California from Los Angeles County southward, Arizona, and northern Baja California. No clay soils found on site.
Lewis sun cup (*Cammissonia lewisii*)	CNPS 3 R-E-D ?-?-2 CoSD C	Low. Increasingly rare in coastal sage scrub and grassy areas in coastal areas of San Diego County. Would have been observed if present.
San Miguel savory (*Satureja chandleri*)	CNPS 4 R-E-D 1-2-2 CoSD A, MSCP	Low. Found in chaparral, most usually of metavolcanic or gabbroic origin in San Diego County, adjacent Orange and western Riverside counties, and northern Baja California between approximately 1,640 and 2,460 feet in elevation. While appropriate soils present, site at too low an elevation. Would have been observed if present.
California spineflower (*Mucronea californica*)	CNPS 4 R-E-D 1-2-3 CoSD D	Low. Found in chaparral, coastal dunes, woodlands, coastal sage scrub and grasslands on sandy soils below 600 feet from central to southern California. Only one population known in San Diego County (Reiser 1994).
California adder's-tongue (*Ophioglossum californicum*)	CNPS 4 R-E-D 1-2-2 CoSD D	Low. Surveys not performed during observable period of plant. Occurs in chaparral, grasslands, and vernal pools during rainy season. Range extends from northern California counties into northwestern Baja California.
Prostrate spineflower (*Chorizanthe procumbens*)	CNPS 4 R-E-D 1-2-2 CoSD D	Low. In coastal areas and foothills of San Diego County below 2,500 feet. Would have been observed if present.
Small-flowered morning glory (*Convolvulus simulans*)	CNPS 4 R-E-D 1-2-2 CoSD D	Low. Prefers coastal sage scrub slopes and mesa grasslands with clay soils below 600 feet. Ranges from Bay Area and Central Valley to Baja.

Table 2.3-2 (cont.)

SPECIES	STATUS*	POTENTIAL TO OCCUR
Ashy spike-moss (*Selaginella cinerascens*)	CNPS 4 R-E-D 1-2-1 CoSD D	Low. Found on flat mesas and open slopes in coastal sage scrub and chaparral in Orange and San Diego counties and north-western Baja California. Would have been observed if present.
Western dichondra (*Dichondra occidentalis*)	CNPS 4 R-E-D 1-2-1 CoSD D	Moderate. Found in dry, sandy banks in coastal sage scrub, chaparral, or southern oak woodland; often proliferates on recently burned slopes from Santa Barbara County to Baja California and on San Miguel Island. May occur on site but would have been difficult to see at this time of year.
Engelmann oak (*Quercus engelmannii*)	CNPS List 4 R-E-D 1-2-2 CoSD D	Low. Distributed between dry coastal plains and cold, montane areas with a minimum precipitation level of 15 inches per year. Generally found in cismontane foothills of southern California, primarily from the Santa Ana Mountains to Baja California Norte, Mexico. Would have been observed if present on site.

*See Biological Technical Analysis Appendix C for status codes.

Table 2.3-3
POTENTIALLY OCCURRING SENSITIVE ANIMAL SPECIES

SPECIES	STATUS*	POTENTIAL TO OCCUR
INVERTEBRATES		
Quino checkerspot (*Euphydryas editha quino*)	FE, CoSD MHCP-TS	Low potential to occur. This butterfly was last observed near the project site at Lake Hodges and in Rancho Santa Fe in 1932 and 1933, and Vista in 1951, respectively. Due to the lack of sightings in the area for 50 years, it is believed that there is a low probability that the Quino checkerspot butterfly occupies the area. The 2000 USFWS survey protocol did not require surveys for this species west of Interstate 15 and north of Lake Hodges.
VERTEBRATES		
Reptiles		
Silvery legless lizard (*Anniella nigra argentea*)	FSC, CSC CEQA, CoSD	Low. Prefers fine soils which are uncommon on site. Important habitat components include loose soil and leaf-litter, adequate soil moisture, warmth, and an abundance of invertebrate prey. Site may be too far inland.
Orange-throated whiptail lizard (*Cnemidophorus hyperythrus beldingi*)	FSC, CSC CoSD, MSCP MHCP-PS	High. Favored food (termites [*Hesperis* sp.]) not observed but likely pre sent. An NCCP target species.
Red-diamond rattlesnake (*Crotalus exsul*)	FSC, CSC CEQA, CoSD	Low. This snake is common in coastal sage scrub and rocky areas. However, while coastal sage is present, there are no obvious rock outcroppings and the area is flanked by water and avocados.
Coronado Island skink (*Eumeces skiltonianus interparietalis*)	FSC, CSC CEQA, CoSD	Moderate. Prefers coastal sage scrub, grassland, and ruderal habitats.
San Diego horned lizard (*Phrynosoma coronatum blainvillei*)	FSC, CSC CoSD, MSCP MHCP-TS	Moderate. Favored food source (harvester ants [*Pogonomyrmex* sp.]) not observed but may be present nearby.
Western patch-nosed snake (*Salvadora hexalepis virgultea*)	FSC, CSC CEQA, CoSD	Moderate. Preferred food source (whiptails) were not observed on site.
Coastal whiptail lizard (*Cnemidophorus tigris multiscutatus*)	FSC CEQA, CoSD	High. One of its referred habitats, coastal sage scrub, occurs on site.
Coastal rosy boa (*Lichanura trivirgata roseofusca*)	CSC, CEQA, CoSD	Low. Commonly occurs in coastal sage scrub and rocky areas. No rocky outcoppings are present on site, and the site is bounded by water and avocado groves.
San Diego ringneck snake (*Diadophis punctatus similis*)	U.S. Forest Service, CoSD	Moderate. Generally occurs in moist habitats such as oak woodlands and canyon bottoms but is also some-sometimes encountered in grassland, chaparral, and coastal sage scrub.

Table 2.3-3 (cont.)

SPECIES	STATUS*	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Birds		
Barn owl (*Tyto alba*)	Migratory Bird Treaty Act, CoSD	Moderate. In California, occurs virtually throughout the entire state grassland, chaparral, riparian habitats, and other wetlands.
Bell's sage sparrow (*Amphispiza belli belli*)	FSC, CSC, CEQA, CoSD MHCP-TS	Low. Should have been observed if present but generally prefers chaparral.
California horned lark (*Eremophila alpestris actia*)	CSC, CoSD	Low. Occurs on coastal slopes and lowlands from Sonoma County to northern Baja California. Prefers sandy beaches, agricultural fields, grasslands, and open areas.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT, CSC CoSD, MSCP MHCP-PS	Low. Range from Southern Los Angeles, Orange, western Riverside, and San Diego counties south into Baja. Found in coastal sage scrub habitat
Cooper's hawk (*Accipiter cooperii*)	CSC, CEQA, CoSD, MSCP MHCP-TS	Low. In San Diego County tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrublands or fields. Occurs throughout the continental U.S. excluding Alaska, parts of Montana, and parts of the Dakotas. Winters south to Mexico and Honduras. No riparian or oak woodland habitat on site or in immediate vicinity.
Loggerhead shrike (*Lanius ludovicianus*)	CSC, CoSD	Moderate. Widespread, but declining, throughout North America. Winters south to Central America. Prefers open habitats including grasslands, shrublands, and ruderal vegetation with adequate perching locations.
Northern harrier (*Circus cyaneus*)	CSC, CoSD MHCP-TS	Low. Widespread throughout the temperate regions of North America and Eurasia; winters and migrates throughout California from below sea level in Death Valley to an elevation of 9,800 feet. Known breeding areas in San Diego County include Torrey Pines, the Tijuana River Valley, and Camp Pendleton. Prefers coastal, salt, and freshwater marshlands; grasslands; and prairies.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	FSC, CSC CoSD MSCP	Moderate. Ranges from Ventura County southeast through Los Angeles, Orange, Riverside and San Diego counties to northwestern Baja California. Prefers coastal sage scrub, where it occurs on rocky hillsides and in canyons, may also be found in open sage scrub/grassy areas of successional growth (e.g., after a fire).
Sharp-shinned hawk (*Accipiter striatus*)	CSC, CEQA CoSD	Low. Would only occur during winter as a visitor.
Turkey vulture (*Cathartes aura*)	CoSD	Moderate. Widespread in western states, year round in coastal California, southern Arizona, Texas and points further south. Usually observed soaring overhead above landscape. Unlikely to use the site's resources, but certainly expected to fly over the site.

Table 2.3-3 (cont.)

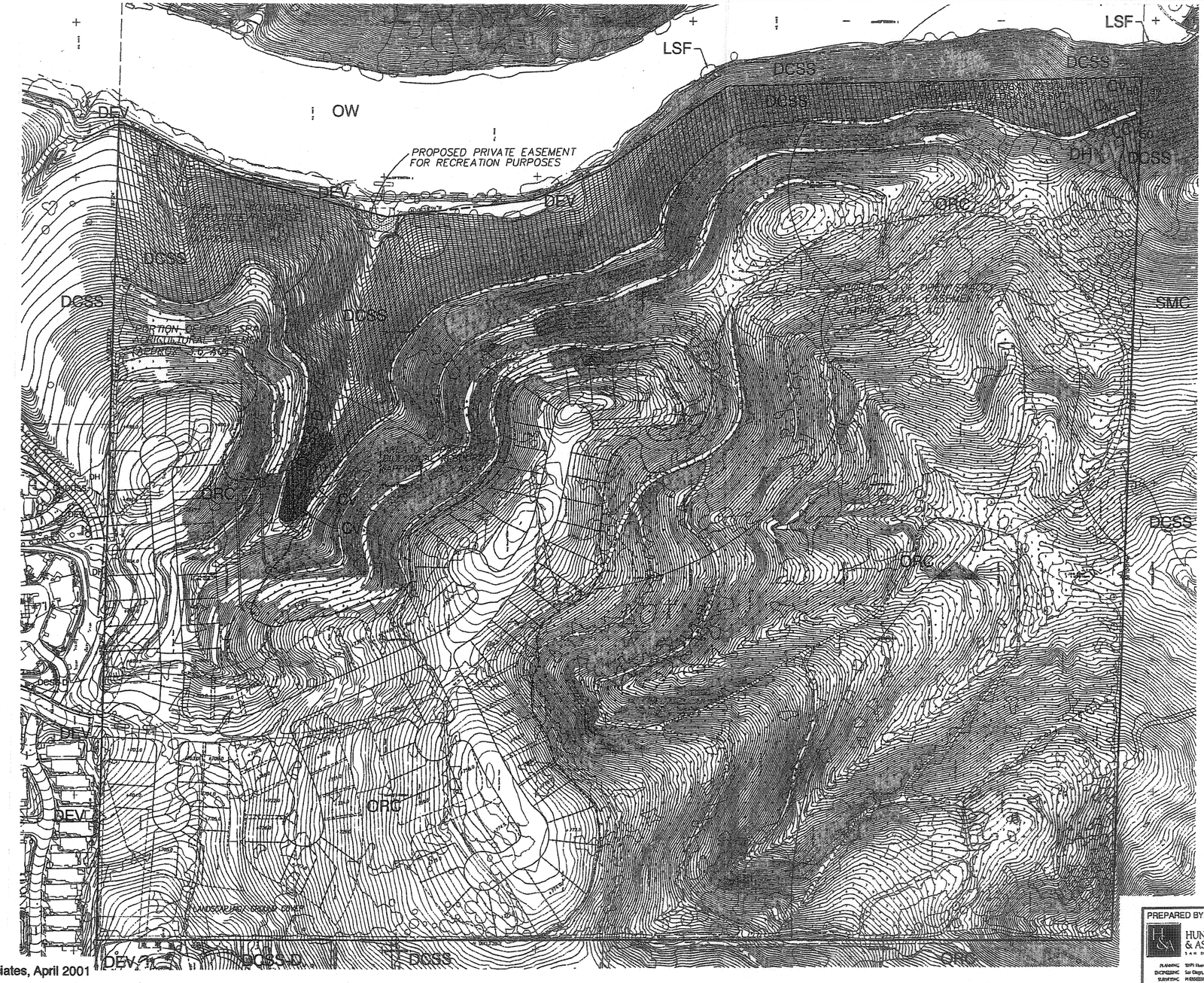
SPECIES	STATUS*	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Birds (cont.)		
White-tailed kite (*Elanus leucurus*)	MBTA	Low. Nesting typically occurs in riparian or oak woodlands adjacent to grasslands where small mammals are hunted. Breeds in the Pacific U.S. Winters to South America as far south as Chile. No suitable habitat on site for roosting, nesting or foraging.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE, CSC CEQA, CoSD MHCP-TS	Low. Prefers fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces. Only two known populations at Camp Pendleton.
Dulzura California pocket mouse (*Chaetodipus californicus femoralis*)	FSC, CSC CEQA, CoSD	Low. Found in chaparral and mule fat scrub. No suitable habitat occurs on site.
Mammals		
San Diego black-tailed jackrabbit (*Lepus califonicus bennettii*)	FSC, CSC CEQA, CoSD MHCP-TS	Moderate. Individuals known from surrounding areas but on-site habitat steep and restricted.
California leaf-nosed bat (*Macrotus californicus*)	FSC, CSC CEQA, CoSD	Moderate. Found in chaparrals, coastal sage scrub and in desert areas in Riverside County and areas south.
Yuma myotis (*Myotis yumanensis*)	FSC, CSC CEQA, CoSD	Moderate. Prefers open woodland, riparian and shrublands at low to moderate elevations.
San Diego Desert woodrat (*Neotoma lepida intermedia*)	FSC, CSC CEQA, CoSD	Moderate. Found in chamise chaparral, oak woodland, and coastal sage scrub below 3000 feet. Woodrat nests were observed but positive identification would require trapping.
Southern grasshopper mouse (*Onychomys torridus ramona*)	FSC, CSC CEQA, CoSD	Moderate. This species is not restrictive in its habitat requirements (Bond 1977).
Fringed myotis (*Myotis thysanodes*)	FSC, CEQA CoSD	Moderate. Roosts in caves and attics of old buildings. Found throughout much of western U.S. through interior Mexico to southern Mexico.
Long legged myotis (*Myotis volans*)	FSC, CEQA CoSD	Moderate. Roosts in buildings, pockets and crevices in rock ledges. Ranges from Alaskan panhandle through western plain states, Baja California and Western Mexico.
Pallid bat (*Antrozous pallidus*)	CSC, CEQA CoSD	Moderate. Found mostly below 6000 feet, roosting in buildings, bridges, and deep crevices in rock faces that do not occur on site but could forage in the area, as there are potential roost sites in the vicinity.
California mastiff bat (*Eumops perotis californicus*)	CSC, CEQA CoSD MHCP-TS	Moderate. May use site for foraging, but roosting sites likely elsewhere. The species roosts in crevices in cliff faces, high buildings, trees, and tunnels. Foraging concentrated around water bodies but also includes coastal sage scrub, chaparral, and grassland habitats. Also occurs in arid, rocky areas.
Townsend's western big-eared bat (*Plecotus townsendii townsendii*)	CSC, CEQA CoSD MHCP-TS	Moderate. May use site for foraging, but roosting sites likely elsewhere. Roosts in mines or caves that do not occur on site but could forage in the area, especially in more mesic habitats such as by the lake.

*See Appendix C of the Biological Technical Analysis for status codes.

Table 2.3-4
IMPACTS TO VEGETATION COMMUNITIES/HABITATS

VEGETATION COMMUNITY/ HABITAT*	TOTAL ACRES ON SITE	ACRES TO BE IMPACTED ON SITE	ACRES TO BE PRESERVED ON SITE	PERCENT TO BE IMPACTED ON SITE	PERCENT TO BE PRESERVED ON SITE
Disturbed habitat (11300)	0.03	0.0	0.03	0.0	100.0
Developed (12000)	0.5	0.0	0.5	0.0	100.0
Orchard (18100)	111.6	35.9	75.7	32.2	67.8
Diegan coastal sage scrub (32500)/Diegan coastal sage scrub – disturbed	14.0	0.3	13.7	2.1	97.9
TOTAL	**126.1**	**36.2**	**89.9**	**28.7**	**71.3**

*Categories and codes are from Holland (1986) and Oberbauer (1996).



LEGEND

- COASTAL SAGE SCRUB TO BE PLACED IN BIOLOGICAL OPEN SPACE EASEMENT (APPROX. 13.7 AC; HOLLAND 32500)
- IMPACTED COASTAL SAGE SCRUB (APPROX. 0.3 AC; HOLLAND 32500)
- OPEN SPACE/AGRICULTURAL EASEMENT (APPROX. 75.7 AC)
- RECREATIONAL EASEMENT (APPROX. 0.1 AC)
- EXISTING AGRICULTURAL/DISTURBED AREA (APPROX. 112.1 AC; HOLLAND 18000/11000)

VEGETATION TYPE / COVER

PLANTS

- DCSS = DIEGAN COASTAL SAGE SCRUB (32500)
- SMC = SOUTHERN MIXED CHAPARRAL (37120)
- DH = DISTURBED HABITAT (11300)
- DEV = DEVELOPED (12000)
- OW = OPEN WATER (13100)
- ORC = ORCHARD (18100)
- LSF = LAKESHORE FRINGE (13200)
- D = DISTURBED

SENSITIVE RESOURCES

PLANTS

- Cv = WHITE COAST CEANOTHUS (CEANOTHUS VERRUCOSUS)
- Cv3 = NUMBER OF INDIVIDUAL PLANTS

SUMMARY

TOTAL PROJECT SITE AREA: 126.1 ACRES

EXISTING SITE CONDITIONS

DIEGAN COASTAL SAGE SCRUB (DCSS):	14.0 AC.
EXISTING AGRICULTURAL/DISTURBED:	111.6 AC.
DEV/DH.:	0.5 AC.

PROPOSED SITE CONDITIONS

NET AREA OF PROJECT NON-DEVELOPMENT:	89.9 AC
PROPOSED OPEN SPACE/AGRICULTURAL EASEMENT:	75.7 AC
PROPOSED RECREATION OPEN SPACE EASMENT:	0.1 AC.
DCSS TO TO BE PLACED IN BIO OPEN SPACE/ESMT.:	13.7 AC.
DEV/DH.:	0.4 AC.
NET AREA OF PROJECT DEVELOPMENT:	36.2 AC
PROPOSED IMPACTED DIEGAN COASTAL SAGE SCRUB:	0.3 AC.
REMAINING PROJECT DEVELOPMENT:	35.9 AC

N

200 0 200 400 Feet

PREPARED BY: HUNSAKER & ASSOCIATES SAN DIEGO INC
PLANNING ENGINEERING SURVEYING

OPEN SPACE EASEMENT MAP/
BIOLOGICAL RESOURCES MAP
LAKE SAN MARCOS ESTATES
COUNTY OF SAN DIEGO TM NO. 5131, GPA NO. 99-02,
MUP NO. P 98-012 AND REZONE NO. R 98-003

SHEET 1 OF 1

Source: Hunsaker & Associates, April 2001

Biological Resources/Impacts

LAKE SAN MARCOS ESTATES
Figure 2.3-1

2.4 Noise

During the NOP period, a comment was made that the Proposed Project may result in potentially significant noise impacts associated with blasting during the construction phase. Giroux & Associates prepared a technical study addressing the issue of short-term construction phase noise. The results of the study, the *Lake San Marcos Estates Construction Noise Impact Analysis* dated March 6, 2001, are summarized below; the report is included in its entirety in Appendix F to this EIR.

The Environmental Analysis Form prepared as part of the NOP process, determined that transportation noise levels, or long-term operational noise, generated from the Proposed Project would not exceed the County noise standards. Community Noise Equivalent Level (CNEL) based standards are set forth in the Noise Element of the County General Plan. They are designed to insure that noise-sensitive uses are adequately shielded from sources that are pre-empted from local control. Policy 4b of the Element establishes a noise standard of 60 dB CNEL in usable outdoor space at noise-sensitive land uses such as single-family residences. A standard of 45 dB CNEL exists for interior exposures in habitable rooms. Because Lake San Marcos Estates is located well away from areas of heavy traffic, major airports or other noise generators, noise impacts relative to CNEL-based land use standards are not significant. Any potential noise impacts would thus be derived from noise generated by activities on the project site itself. Since residential activity noise generation is relatively benign (loud parties, barking dogs, lawn mowers, etc.) except in very close proximity to an individual home, potential project-wide noise impacts are not expected. No significant long-term noise impacts would occur and no additional analysis is deemed necessary. The following analysis focuses on short-term construction noise.

2.4.1 Existing Conditions

The project site is void of urban development and is actively farmed for avocados. Noise generated from the project site is minimal and includes noise generated by the occasional maintenance or harvesting trucks. No construction noise is currently generated on the project site.

2.4.2 Thresholds of Significance

Construction noise is governed by County Code of Regulatory Ordinances Section 36.410. The relevant criteria from the Ordinance comprise the thresholds for determining significance.

- It shall be unlawful for any person, including the County of San Diego, to operate construction equipment at any construction site on Sundays or holidays. In addition, it shall be unlawful for any person to operate construction equipment at any construction site on Mondays through Saturdays, except between the hours of 7 AM and 7 PM. The purpose for this criteria is to minimize construction noise disturbance during those hours when individuals are likely to be home.

- No such equipment, or combination of equipment regardless of age or date or acquisition, shall be operated so as to cause noise at a level in excess of seventy-five (75) decibels for more than eight hours during any twenty-four hour period when measured at or within property lines of any property which is developed and used either in part or in whole for residential purposes. The 75 dB threshold is the noise level at which 50 percent of people express that they are "highly annoyed" by ambient sound levels, and at which conversation becomes impeded even at a close range between source and receiver (Encyclopedia of Acoustics, 1997).

2.4.3 Analysis of Project Effects and Determination as to Significance

2.4.3a Construction Noise Impacts

Typical noise levels generated by a construction project were derived from the EPA document *Noise from Construction Equipment and Home Appliances* (1971). Varying types and sizes of construction equipment will be utilized during construction of the project. These categories are described below, together with corresponding noise level data.

Construction noise is expected to occur during daylight hours on weekdays, when residential noise sensitivity is usually low. Overall, although noise impacts may be intrusive, because of their temporary nature, such impacts are typically considered below significant levels because they occur only on a limited number of days during times of the day which are normally of lesser noise sensitivity.

Noise sources from construction equipment vary widely in terms of both noise character (impulsive versus continuous, frequency [pitch] and loudness variability) and absolute loudness. Noise from surface disturbance equipment (dozer, scraper, excavator, etc.) is generally the loudest, with generally quieter equipment (roller/compactor, cement truck, etc.) used in later phases of construction.

The most prevalent noise source in construction equipment is the internal combustion engine (usually diesel powered) used to provide motor and/or operating power. Engine-powered equipment may be categorized according to its mobility and operating characteristics; i.e., as (1) earth-moving equipment (highly mobile); (2) handling equipment (partly mobile); and (3) stationary equipment. Characteristic noise levels from typical construction equipment are shown in Figure 2.4-1.

Most project-related construction activity noise generation will result from highly mobile equipment. Internal combustion engines are used for propulsion (either on wheels or tracks) and for powering working mechanisms (buckets, arms, trenchers, etc.). Engine power may vary from about 50 horsepower (hp) to over 600 hp. Engine noise typically predominates with exhaust noise usually being of secondary importance and inlet noise and structural noise being of tertiary importance. Other sources of noise in this equipment include the mechanical and hydraulic transmission and actuation systems and cooling fans. Typical operating cycles may involve one or two minutes of full-power operation, followed by three or four minutes at lower power. Noise levels at 50 feet from heavy equipment range from about 73 to 96 dB(A). This alternating cycle of full power/low power produces a typical hourly average of around 82 dB at 50 feet from the equipment.

If several pieces of such equipment are operating in very close proximity, their noise impacts are additive and thus somewhat increase the "envelope" of potentially significant temporary construction noise impacts. For two major pieces of highly mobile equipment in simultaneous and co-located operation, their theoretical combined noise level for extended operations is 85 dB at a 50-foot reference distance. These values are not precise, particularly because the mobility of the equipment constantly changes the source-receiver line of sight and distance separation.

Spherical spreading of sound waves will reduce the 85 dB equipment noise measured at 50 feet from the source by 10 dB to the 75 dB County standard within 160 feet from the center of the work area. There are a few existing homes located within 160 feet of proposed grading along a small portion of the northern site boundary. Construction equipment duty cycles, however, are variable throughout the 8-hour period comprising the timeframe of standard measurement in the County Noise Ordinance for construction. The equipment is highly mobile, and thus will operate within the 160-foot noise envelope of any individual home for only a small portion of the day.

For comparison purposes, noise measurements from a major excavation in San Marcos for a Metropolitan Water District of Southern California (MWD) water project (Pipeline No. 5), showed that even for semi-stationary sources (large power shovel and haul trucks), the duty cycle variability and partial equipment mobility maintained 8-hour average noise levels at well below their maximum shorter-term peaks. Results of these measurements showed the following levels at 50 feet from the construction site: Peak 1-second (L_{max}) = 87 dB(A); Peak hour (L_{eq}) = 79 dB(A); and 8-hour average (L_{eq}) = 74 dB(A).

Although the equipment generated short-term noise that would have predicted a possible "excess" noise impact to 100+ feet, the San Diego County Noise Ordinance was actually met at less than 50 feet from the activity. Existing homes (property lines) are shown in Figure 2.4-2 to range from 0 to 84 feet from the limits of grading, with the actual homes located between 20 and 120 feet away from the limits of grading. During any work day, the average source-receiver distance is estimated to be between 40 and 60 feet. To the extent that the above measured noise is representative of peak noise impacts at project grading operations, the audible short-term noise impact at the nearest homes will likely be less than 74 dB(A) over eight hours, or within County standards. Noise mitigation for mass grading relative to existing residences is not anticipated to be required as the audible short-term noise impact at the nearest homes will likely be less than significant.

Daily construction equipment is anticipated to be comprised of a variety of vehicles, including: one D9 and two D10 dozers, two Cat 969 loaders, one Cat 984 compactor, two to four Cat 657 scrapers, a motor grader, three water trucks, and four off-road earth haul trucks. Noise measurements at a large-scale earth-moving operation involving twenty pieces of operating equipment with a very similar equipment fleet (Cedar Hills Landfill, Kings County Waste Management, Seattle, 1998) showed a noise level of 60 dB L_{eq} at 1000 feet from the centroid of the earth moving activity. The 75 dB L_{eq} contour for this measurement would be at 180 feet from the mid-point of the activity. These measurements suggest that under direct line of sight, with a large equipment fleet operating in very close proximity to existing homes, the County standard could be exceeded if the operation continued non-stop for eight hours. In the absence of a direct line of sight due to irregular terrain for those homes closest to the proposed grading, as shown in the cross-sections in Figure 2.4-2, and with 20 pieces of equipment not likely operating within a 180-foot radius because of space limitations, violations of the 8-hour standard are considered unlikely.

Equipment staging will occur on a staging area located on Units 70-75, located approximately 1,000 feet from the nearest homes. The noise level from staging activities will be no louder than actual grading. The potential impact envelope from any staging activities will be smaller than from grading, and would not result in significant noise impacts to off-site residences.

In addition to standard construction equipment noise, project construction will require blasting of volcanic rock. As discussed in Subchapter 2.1, geologic and surficial materials within the site include Jurassic Santiago Peak Volcanics. Blasting will be required to create fracturing that will allow the rock to be excavated to create flat building pads. A small portion of the blasting activity may occur in proximity to existing homes (Figure 2.4-2). Whereas dozers and scrapers are highly mobile and will affect any individual home for only a brief period of time, drill rigs for placing explosive charges operate in a small area for an extended amount of time.

The blast itself is designed to remain subsurface and only generate shock waves to fracture the rock in the immediate vicinity of the charge. Controlled blasting performed according to County standards thus has only a dull "thump." (Refer to the Chapter 1.0 description of Grading and Construction Phase for applicable blasting criteria.) The reported reference noise level for construction blasting is 94 dB(A) for one second at 50 feet. The 8-hour average L_{eq} due to a single blast is 49 dB(A). This level will not measurably affect

compliance with the ordinance level of 75 dB(A) $L_{eq}(8)$. No significant blasting noise is projected from the actual blasts.

Drilling machines are required for placement of blasting charges. The machines typically involve 20 minutes or so of drilling, withdrawing the drill-string, a few minutes of idling to relocate the machine, and then the cycle is repeated. Measurements of drilling noise to place quarry charges showed an average one-hour level of 89 dB(A) L_{eq} at 50 feet. In contrast to the mobile dozers, scrapers or graders, the drilling machine could occupy a very small area over an entire 8-hour period. The 75 dB County standard could be exceeded out to 260 feet from the drill under worst-case conditions using an 89 dB reference source strength.

Drilling operations within 260 feet of a residence for purposes of blasting would require mitigation to meet County noise standards. Mitigation may be effected by erecting a temporary noise propagation barrier, or by reducing the hours of drilling activity. Noise reduction of 10 dB is reasonably feasible with a temporary berm, or placement of a large piece of equipment between the drill rig and the nearest affected home. The source-receiver distance between the drilling machine and the nearest residence that can be accommodated without exceeding the County standard depends upon the noise reduction effectiveness of any such barrier. The barrier reduction shown in Table 2.4-1 is needed for close operations to any adjacent homes. Consequently, the reduction in drilling time shown in Table 2.4-2 would allow for closer operation with a "noise dose" that would meet standards.

The potential for impacts to biological resources due to short-term construction noise is discussed in Section 2.3.3d, biological resources indirect impacts.

2.4.4 Mitigation Measures

Because exact drill rig locations and any barrier effectiveness is not known at present, the following mitigation measure is recommended to reduce short-term noise impact 2.4.3a:

1. Drilling operations for blasting within 260 feet of the property line of a residential property shall be shielded through physical interruption in the direct line of sight from the source to the receiver.

2. A qualified acoustician shall monitor noise levels at the residential property line most affected by construction operations (i.e., along the northern project site boundary both west and east of Camino del Arroyo Drive). When a daily noise "dose" has been accumulated sufficient to equal 75 dB(A) $L_{eq}(8)$, drilling or construction operations shall be terminated for that day.

2.4.5 Conclusions

Drilling operations for blasting within 260 feet of a residence could cause the San Diego County Noise Ordinance to be exceeded. Interruption of the direct line of sight by terrain, an earthen berm or a temporary noise wall would allow for drilling operations closer than 260 feet while meeting standards. Reduction in the number of hours, or some combination of barrier reduction plus reduced drilling hours, would reduce potentially significant impacts to below a level of significance.

Table 2.4-1
TEMPORARY NOISE BARRIER SOUND REDUCTION REQUIREMENT

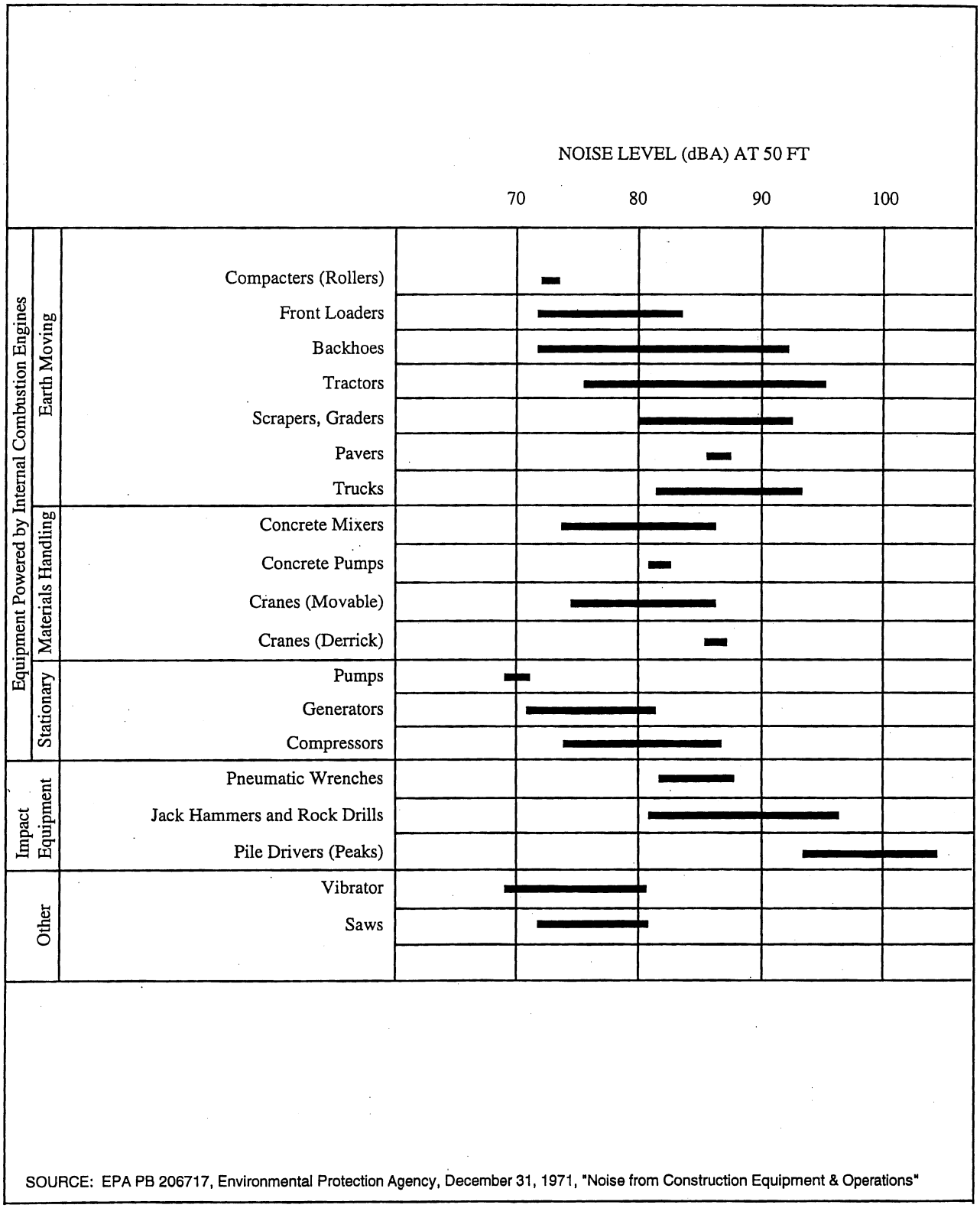
SOURCE-RECEIVER DISTANCE (feet)	NEEDED REDUCTION*
50	14 dB
64	12 dB
80	10 dB
100	8 dB
128	6 dB
160	4 dB
200	2 dB
256	0 dB

*To prevent exceeding the 75 dB L_{eq} (8) standard under worst-case conditions (i.e., 8 hours of continuous operations).

Table 2.4-2
DRILLING TIME REDUCTION REQUIREMENT

SOURCE TO POTENTIAL RESIDENTIAL PROPERTY (feet)	ALLOWABLE DURATION OF DRILLING (hour[s])*
50	0.33
64	0.50
80	0.80
100	1.25
128	2.00
160	3.16
200	5.00
256	8.00

*Would meet the 75 dB L_{eq} (8) standard at the indicated source-receiver distance under direct line-of-sight conditions.



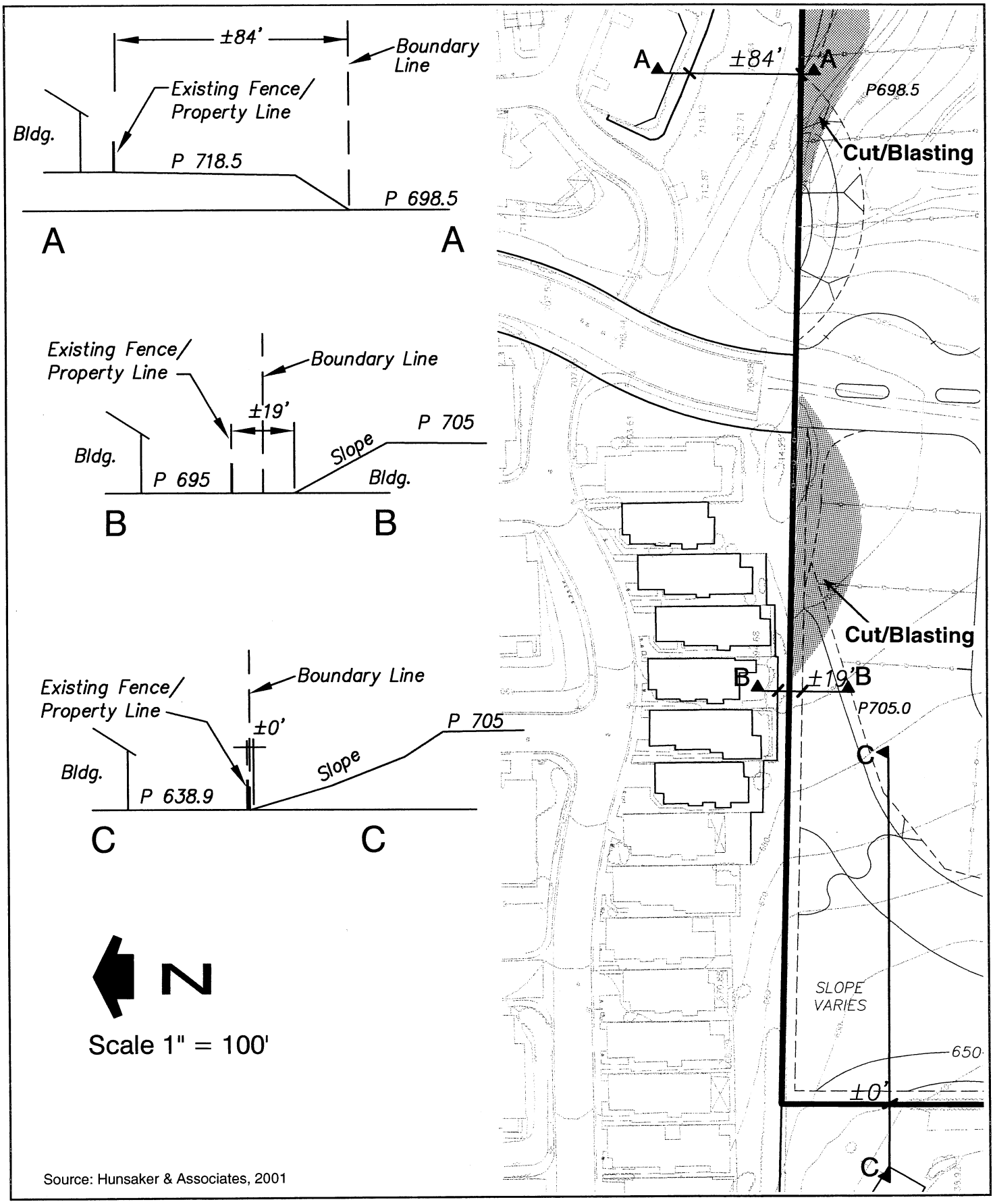
Source: Giroux & Associates, September 2000

Typical Construction Equipment Noise Generation Levels

LAKE SAN MARCOS ESTATES

Figure 2.4-1

HELIX



Source: Hunsaker & Associates, 2001

Construction Noise Map

LAKE SAN MARCOS ESTATES

Figure 2.4-2

HELIX

2.5 Aesthetics and Landform Modification

2.5.1 Existing Conditions

Project Site Characteristics and Setting

The visual nature of the site is characterized by moderate and steeply sloping hillside terrain, with a majority of the site being actively farmed with avocado orchards. Refer to Figure 1.1-10 in Chapter 1.0 for an aerial photograph of the project site and immediately surrounding properties and lake. A majority of the vegetation on site consists of mature avocado trees, with a few interspersed citrus trees. Some of the avocado trees located in the southern portion of the site have been pruned substantially for rejuvenation (these trees have been painted white), while others have been afflicted with what is commonly referred to as "root rot" and, are in the process of being replaced (Refer to Figure 1.1-10 in Chapter 1.0). In addition to the avocado and citrus trees, a swath of native coastal sage scrub habitat extends between the northern and southern property boundaries, and between the avocado orchards and Lake San Marcos, varying in width between 200 and 250 feet.

A majority of the site consists of moderate- to steep-sided slopes, with approximately 67 percent of the site maintaining slopes varying between 15 and 50 percent. Slopes exceeding 50 percent are found primarily within a large canyon located in the northeast quadrant of the site and along the southeasterly property boundary adjacent to the lake shoreline. Elevations on site range between approximately 810 feet above MSL on a knoll in the west-central portion of the site, to 500 feet above MSL along portions of the eastern and southern site boundaries.

Improvements on site consist of structures and equipment used in the active agricultural operations (i.e., avocado farming). Existing structures include two trailers, two small sheds/wooden structures, a carport and a small pump house. All of these facilities are located in the northwest corner of the site, near the existing dirt access road that extends south from Camino del Arroyo Drive. A few dirt roads cross the site providing access for farming equipment. (Refer to Figure 1.1-13a in Chapter 1.0 for existing site photographs.) A small picnic ground and boat dock is located on the property's eastern boundary where the site abuts the Lake San Marcos shoreline. This picnic area and dock are utilized by members of the LSMCA. Other improvements on site that are less visible include irrigation supply lines to the orchards and a small honeybee farm located in the midst of the avocado groves.

The project site is located in an area dominated by open space and rural and suburban residential uses. Surrounding land uses include single- and multi-family residences to the north; Lake San Marcos, a few scattered single-family homes on the east side of the lake, and undeveloped open space consisting of naturally vegetated steep slopes to the east; undeveloped open space and a small enclave of industrial uses to the south; and, rolling hills of open space and scattered single-family residences to the west.

Community Character

As discussed in Section 6.1.1 and Appendix H, the community surrounding the project site is primarily characterized by suburban and rural residential uses, although the community character closest to Rancho Santa Fe Road and San Marcos Boulevard, where commercial and retail uses are located, is considered more urban in nature. The rural and suburban residential developments to the east of the project site are set at the base of and continue into the foothills of the Double Peak mountain range. These foothills and range lend a rural character to this area.

Community and Environmental Plan Requirements

As discussed in Section 6.1.1 and Appendix H, the project site is located within the Sphere of Influence of the City of San Marcos. As such, the City requests that development on the project site conform to the community identity goals and policies identified within the Lake San Marcos Neighborhood Plan relative to minimizing visual intrusion of development into hillsides. The applicable goals and policies are listed in Table 1 of Appendix H, and include: the preservation and enhancement of the neighborhood; retention of hillside areas; retention of the established lake as the focal point and activity center of the neighborhood; retention of surrounding hillsides as a visual backdrop for the neighborhood by minimizing visual intrusions along and atop the ridgelines of such hillside areas; and, retention of existing avocado and other type of groves through selective siting of homes.

In addition to the Neighborhood Plan, the County's RPO provides development controls for resources within the County, including resources found on the site such as sensitive biological habitat. As noted in Subchapter 2.3, the project site includes approximately 14 acres of sensitive habitat (Diegan coastal sage scrub).

Designated Scenic Highways

As noted in Table 1 of Appendix H, Land Use Plans and Policies Consistency Evaluation, no designated scenic highways are located within proximity to the project site.

Visual Resources

For the purposes of this analysis, visual resources include unique topographic features, slopes exceeding 25 percent gradient, ridgelines, undisturbed native vegetation, surface waters and major drainages, and public park or recreational areas. While the City of San Marcos identifies avocado groves as important visual elements for defining community character (Lake San Marcos Neighborhood Plan Residential Policy A.3), avocado groves are not identified by the County of San Diego as a significant visual resource and were not considered as such in this analysis. (Avocado groves were, however, considered in the land use community character analysis, as discussed in Chapter 6 and Appendix H.)

Visual resources in the project vicinity include the Double Peak mountain range and associated foothills, ridgelines and native vegetation to the east and southeast of the project site, undisturbed native vegetation to the south and west of the project site, and Lake San Marcos to the east of the project site. The foothills, steep slopes and ridgelines of the Double Peak mountain range on the east side of the lake provide the key scenic resource and visual backdrop for the Lake San Marcos community. Visual resources on site include approximately 14 acres of undisturbed native vegetation along the eastern portion of the site and approximately 68 acres of land with slopes exceeding a 25 percent gradient. The project site does not have any unique topographic features, is not considered to be part of the Double Peak range that is located on the east side of the lake and visually bounds the City of San Marcos to the south, and is not considered a ridgeline by itself or as part of the nearby range and community backdrop. The project site is considered to be a continuation of the lower rural hills between the lake and the more developed corridors along Rancho Santa Fe Road and San Marcos Boulevard. The small on-site picnic area and boat dock is a private recreational area of 0.1 acre and is not considered a visual resource.

Views of Project Site

Existing views of the project site from selected surrounding land uses are depicted in Figures 2.5-2a and 2.5-2b; a photograph key map is provided in Figure 2.5.1.

The most unobstructed views of the project site are from Lake San Marcos which is considered a private recreational resource (use of the lake is restricted to members of the LSMCA). Photographs taken from

three locations along the eastern shoreline of the lake in the vicinity of the project site are depicted in Figures 2.5-2a and 2.5-2b (please see Figure 2.5-1 for viewpoint locations). The photographs taken from Viewpoints 1 and 2 (see Figure 2.5-2a) show the eastern portion of the project site which includes avocado groves, areas of undeveloped land, and the small on-site picnic area and dock. Figure 2.5-2a also shows the large canyon located in the northeastern quadrant of the site. The photograph taken from Viewpoint 3 (see Figure 2.5-2b) similarly depicts the avocado groves, undeveloped land and the boat dock located on site and also shows a portion of an on-site unpaved service road and existing residences to the north of the project site.

Private views toward the project site also include views from residences located adjacent to the northern and western boundaries of the site, although these views are somewhat obscured by existing topography, landscaping and fences/walls which separate the residences from the site. The site is also visible from residences within the Lake San Marcos Community to the east/northeast across Lake San Marcos. Current views toward the site from this community consist primarily of an avocado grove-covered hillside located between an existing residential development and steeply sloped natural open space of the Double Peak mountain range (located east of Lake San Marcos).

Public views of the project site are limited to public roadways including: residential streets adjacent to the northern and western boundaries of the project site; portions of some residential streets to the east of Lake San Marcos within the Lake San Marcos Community; portions of San Marcos Boulevard; a small segment of Rancho Santa Fe Road; and, portions of streets within the La Costa Meadows Industrial Park to the south of the site. Views of the site from these public roadways are somewhat obscured due to intervening topography, landscaping, and existing structures/development. Viewpoint 4 in Figure 2.5-2b was taken along a frontage road that parallels northbound Rancho Santa Fe Road south of Questhaven Road. The photograph from this viewpoint represents the most unobstructed public view of the site. Viewpoint 4 shows the existing industrial park and undeveloped land to the south of the project site and the existing on-site avocado groves. A few scattered homes, above-ground water reservoirs, and radio/satellite towers are also visible to the west and east of the site. Viewpoint 4 is representative of a motorists view from Rancho Santa Fe Road; however, this view is limited in duration due to the posted speed limit (50 mph) and the curvy nature of this segment of roadway, offering brief and intermittent distant views. Views from Rancho Santa Fe Road immediately west of the project site are blocked by topography and landscaping.

2.5.2 Thresholds of Significance

A significant aesthetic impact is anticipated if the Proposed Project would result in a:

- Physical change which is determined to be in substantial conflict with the character of the project area as defined by the approved community plan.

- Physical change which will substantially affect a viewshed of a designated scenic highway (as defined in the Scenic Highway Element of the General Plan) regardless of priority status.

- Physical change which will substantially degrade the quality of an identified visual resource, including but not limited to unique topographic features, slopes exceeding 25 percent gradient, ridgelines, undisturbed native vegetation, surface waters and major drainages, a public park or recreational area. (A physical change is defined as a substantial or potentially substantial, adverse change in any of the physical conditions, including grading, structures, roads, landscaping, brushing and clearing, and any discretionary action which will ultimately result in such physical change.)

With respect to landform alteration, the following are considered potentially significant:

- Any cut or fill slope over 15 feet in height
- Any grading proposed within environmentally sensitive areas

The thresholds of significance noted above were developed from several sources, including: the State CEQA Guidelines Environmental Checklist Form; the County of San Diego Environmental Analysis Form; the County of San Diego Resource Protection Ordinance; and the County of San Diego Hillside Development Policy. These thresholds were utilized because they address the potential concerns relative to community character, aesthetic resources, important views and visually sensitive landforms.

2.5.3 Analysis of Project Effects and Determination as to Significance

2.5.3a Community Character/Plan Impacts

As discussed in Section 6.1.1 and Appendix H, no significant community character impact is anticipated. The Proposed Project would be compatible with the character of surrounding suburban and rural residential land uses and with the goals and policies of the Lake San Marcos Neighborhood Plan. (Refer to Section 6.1.1 for further discussion.)

2.5.3b Designated Scenic Highway Viewshed Impacts

There are no designated scenic highways located within proximity to the project site. Therefore, no impacts to the viewshed of a designated scenic highway would occur.

2.5.3c Visual Resources Impacts

The following analysis focuses on impacts to visual resources associated with construction of the proposed residential development within the subject 126-acre parcel. The Proposed Project would require a pump station and pipeline to convey potable water to the project site from existing water district reservoirs. The proposed pump station building, described in Chapter 1.0, would be located on disturbed VWD property that has two above-ground reservoirs. The pump station building is proposed to be approximately 25 feet wide, 35 feet long and 15 feet high and would be constructed using cement block (split face) painted in a natural tone. The building would be located adjacent to the two existing reservoirs and would be overshadowed by, and blend with, those two structures. The 8- and 10-inch diameter water pipelines would be underground. Thus, no notable visual impacts are anticipated to occur from development of the proposed pump station and water pipeline.

The Proposed Project incorporates several design features/measures to minimize visual impacts to surrounding land uses. These design features/measures, described also in Chapter 1.0, include:

- Retention of avocado trees on the slopes adjacent to the proposed house pads, as close as possible to the edge of the pads, to provide shielding of the houses and to break up the flat contour of the pad edge.
- Residential structures will be set back a minimum of 15 feet from the edges of the pads so that the slopes and the viewing angles work together to minimize the degree to which the houses are visible from lower elevations.
- Landscaping including revegetation of the fill slope near the proposed desilting basin, ornamental landscaping around the entry gate and pool/spa area, and ornamental landscaping near the northeast corner of the site, to the west of Units 2 through 7, 16 through 19, and 35 through 37.

In addition, visual screening of proposed structures includes a 14-acre Biological Open Space Easement, and approximately 76 acres of avocado orchards within the proposed Open Space/Agricultural Easement which are proposed to be maintained for farming purposes. As discussed in Chapter 1.0, the remaining avocado trees will be rejuvenated and replaced, as warranted. The appearance of the orchard is likely to continue to change periodically as it has historically, depending upon the needs of individual trees.

Figures 2.5-3a through 2.5-3d provide visual simulations of how the project would likely appear from viewpoints along the eastern shoreline of Lake San Marcos and from Rancho Santa Fe Road to the south. These viewpoints provide the most unobstructed views of the site, including views directly up the canyon in the northeast quadrant of the site where the desilting basin and substantial fill slopes are proposed. These simulations depict both proposed and retained project landforms with two-story residences plotted on individual home sites. (Both single- and two-story structures are proposed; however, two-story structures were used in the simulations for a worst-case analysis.) Figures 2.5-3a through 2.5-3c show that existing topography would screen a majority of the Proposed Project from Viewpoints 1 through 3 along the eastern shoreline of the lake. Avocado trees that would be retained on site would further screen and soften views of the proposed residences that would be minimally visible from these viewpoints. As shown in Figure 2.5-3c, the Proposed Project would be consistent in nature to, and less visible than, existing single-family residences to the north of the project site that currently abut the lake shoreline and the existing multi-family development to the northeast of the site. Proposed residential units are located approximately 450 feet west of the lake (at the closest home site) and are buffered from the lake by native habitat and avocado trees.

As discussed in Chapter 1.0, Project Description and Environmental Setting, and shown in Figures 2.5-3a through 2.5-3c, a total of 13.8 acres of undisturbed native vegetation along the eastern portion of the site, a visual resource, would be retained. The undisturbed native vegetation would be buffered from proposed development by avocado trees that would be retained on site, with the exception of approximately 0.3 acre of habitat within the canyon (in the northeastern quadrant of the site) where the proposed desilting basin and fill slope would encroach into the most westerly limits of native vegetation. As shown in Figure 2.5-3a, the native vegetation within the canyon adjacent to proposed development is not visible as it is screened by avocado trees that will be retained on site. Therefore, the Proposed Project would not substantially degrade the quality of the on-site undisturbed native vegetation, a noted visual resource.

The Proposed Project would not substantially degrade the quality of other visual resources in the area which include the Double Peak mountain range and associated foothills, ridgelines and native vegetation to the east and southeast of the project site (across Lake San Marcos); undisturbed native vegetation to the south and west of the project site; and, Lake San Marcos to the east of the project site. The project does not propose any development on/within these visual resources, and proposed development would be either somewhat removed from these resources or buffered from visual resources by existing avocado trees and open space that would be retained on site. The Proposed Project would not significantly impact important visual resources on site, including native vegetation (as discussed above) and slopes exceeding 25 percent gradient. Within the 126.1-acre site, the proposed residential development would impact a total of 3.4 acres of land with slopes exceeding 25 percent gradient. Since the steep slope impacts cover a relatively small portion of the site (8.9 percent) and the project site is not considered to have unique topographic features or be part of a natural ridgeline (i.e., the Double Peak mountain range), the impacts to this visual resource are not significant. No significant impacts to visual resources would occur as a result of project development.

Private views toward the project site would be from residences located adjacent to the western boundary of the site and within the Lake San Marcos Community to the north and northeast across Lake San Marcos. The views from residences located adjacent to the northern and western boundaries of the site would be partially screened by existing landscaping and fences/walls, and landscaping proposed as part of the project (discussed above). While the foreground views from residences adjacent to the site would be altered by the replacement of avocado trees with homes, distant views of visual resources would not be

altered. The Proposed Project would not adversely affect existing views from neighboring residences toward visual resources, including the Double Peak mountain range and associated foothills to the east and southeast of the project site; undisturbed vegetation to the east, south, and west of the project site; and Lake San Marcos to the east of the project site. The proposed development would not be within the viewsheds of these visual resources for some residents and would continue to be substantially screened by retained avocado trees for other neighboring residents. Residents along Panorama Drive having views of the Double Peak mountain range and foothills, Lake San Marcos, or the undisturbed vegetation to the east of the project site would continue to have distant views of visual resources. Foreground views toward the project site would change with the replacement of approximately one-third of the site's avocado orchard with residential dwelling units, however, this change would not result in a significant impact to views of sensitive resources.

Views of Proposed Project development from residences within the Lake San Marcos Community to the east/northeast across the lake would be distant and somewhat screened by avocado trees that would be retained on site. The proposed development would be similar to existing residential development to the north of the site relative to site elevation and architectural style. The Proposed Project would not adversely affect existing views from these residences toward identified visual resources such as the Double Peak mountain range and foothills, or the undisturbed vegetation to the east of the project site. The proposed development would not block or obscure views toward these visual resources. While Lake San Marcos and the undisturbed native vegetation along the eastern portion of the site are visible from these residences, the quality of these visual resources would not be altered by the Proposed Project and, as shown in Figures 2.5-3a though 2.5-3c and discussed above, the proposed development would not block views of these visual resources. Some of the residences within the Lake San Marcos Community to the east/northeast across Lake San Marcos do not have views of the undisturbed vegetation on site due to intervening topography.

Public views of the Proposed Project would be from public roadways including: residential streets adjacent to the northern and western boundaries of the project site; portions of some residential streets to the east of Lake San Marcos within the Lake San Marcos Community; portions of San Marcos Boulevard; a small segment of Rancho Santa Fe Road; and, portions of streets within the La Costa Meadows Industrial Park to the south of the site.

Views of Proposed Project development from San Marcos Boulevard would be distant, intermittent, and partially obscured due to intervening topography, landscaping, and existing structures/ development. The proposed development would be further screened by avocado trees that would be retained on site and would be similar in appearance to the existing multi-family residential development near the northeast corner of the site which is also visible from San Marcos Boulevard. While rooftops and some residential façades may be visible from this arterial, the view would be similar, although less dense, to the view of existing homes to the north of the site, which are of a similar style as those proposed and located at a similar elevation. In addition, the Proposed Project would not alter or obscure views from San Marcos Boulevard toward visual resources in the project vicinity including the Double Peak mountain range and associated foothills. Motorists/pedestrians/bicyclists using San Marcos Boulevard do not have views of the undisturbed vegetation along the eastern portion of the site or Lake San Marcos due to intervening topography and existing landscaping/development.

Views toward the Proposed Project development from Rancho Santa Fe Road (Figure 2.5-3d) would include the existing industrial park (to the south of the Proposed Project) in the foreground, the existing radio towers and water reservoirs to the east and west of the project site, and rooftops within the development. The proposed residential structures would encroach into the current view of avocado groves by extending approximately one-third into the grove, looking from west to east (Figure 2.5-3d). While the view would change, the visual impact is not considered significant since the project would not result in impacts to significant visual resources, such as natural ridgelines (found to the east as part of the Double Peak mountain range) which provide a visual backdrop to the Lake San Marcos community, or

undisturbed native vegetation, and would be visible only momentarily to motorists. As noted in Section 2.5.1, views toward the site from Rancho Santa Fe Road are limited in duration due to the posted speed limit (50 mph) and the curvy nature of this segment of roadway. In addition, views from this direction are distant and somewhat obscured due to intervening topography and landscaping (e.g., avocado groves). The Proposed Project would not alter existing views from Rancho Santa Fe Road toward visual resources in the vicinity (and off-site) including the natural open space to the east, south and west of the project site and the Double Peak mountain range and associated foothills and ridgelines. In addition, motorists using Rancho Santa Fe Road do not have views of the undisturbed vegetation along the eastern portion of the site or Lake San Marcos due to intervening topography. No significant impact to visual resources is anticipated for viewers using Rancho Santa Fe Road.

2.5.3d Landform Modification Impacts

The Proposed Project would require grading and improvements to 36.2 acres in the northern portion of the project site, where development grading would cover approximately 29 percent of the 126.1-acre property. Earthwork is proposed to be balanced with an estimated 530,000 c.y. of cut and 530,000 c.y. of fill. Project grading would result in the lowering (cut) of approximately fifty percent of the land within the limits of grading to create pads for houses and the circulation system. The project would also require the placement of fill in depressed areas, particularly along the northern portion of the proposed development footprint. Visually, grading would result in a flattening of the top of slope at high points within the limits of grading, where an average cut of 16 feet is anticipated.

Although manufactured slopes are proposed to be contour graded to blend and conform with existing landforms, the project proposes the construction of an approximately 116-foot fill slope within the large canyon in the northeastern portion of the project site. This fill slope exceeds the 15-foot height threshold of potential significance. The proposed fill slope is located within a large canyon that is visible only from a very limited vantage point on a privately owned lake. The fill slope would not be visible from public vantage points, or from residences within the Lake San Marcos Community. In addition, the fill slope, service access road and desilting basin would jointly encroach into approximately 0.3 acre of mostly disturbed Diegan coastal sage scrub found within the canyon. The remaining 13.8 acres of Diegan coastal sage scrub within the project site (considered to be of a higher quality) are being dedicated to the County in an Open Space Biological Easement. The proposed fill slope would not be visible from public vantage points, and minimally encroaches into native habitat. Nonetheless, because the proposed fill slope exceeds the 15-foot threshold, it is considered a significant landform alteration impact and requires mitigation.

2.5.4 Mitigation Measures

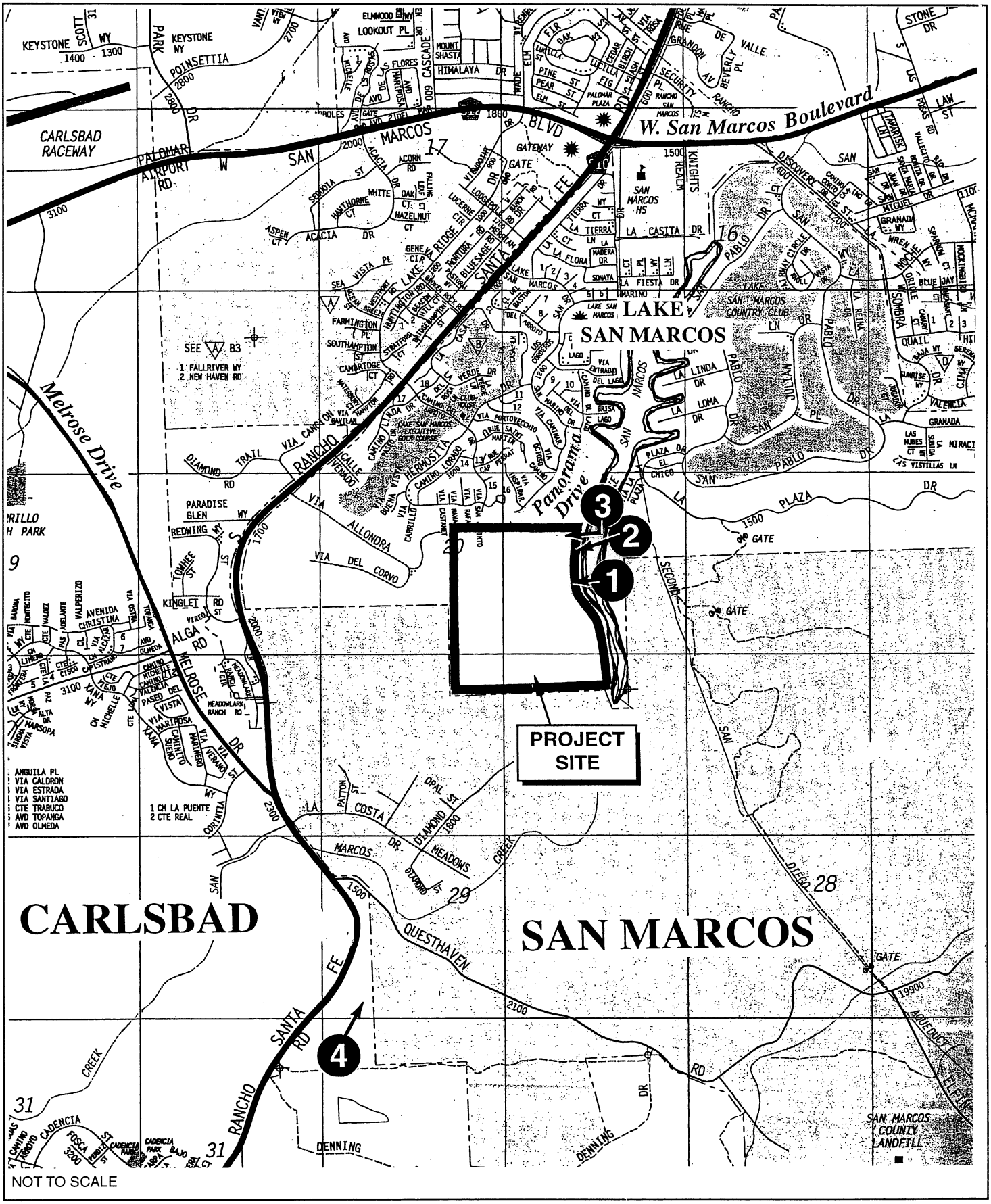
No significant visual resource impacts are identified. Therefore, no mitigation measures are required. The significant landform modification impact (Impact 2.5.3d) can be mitigated to below a level of significance by implementation of the mitigation measures noted below.

1. The proposed fill slope in the canyon shall be graded to simulate the natural topography.

2. Fill slope landscaping shall include a mix of native vegetation that conforms to the plant species found within the Biological Open Space Easement.

2.5.5 Conclusions

No significant aesthetic impacts were identified. Significant landform modification impacts are anticipated, but will be mitigated to below a level of significance with the mitigation measures described above.

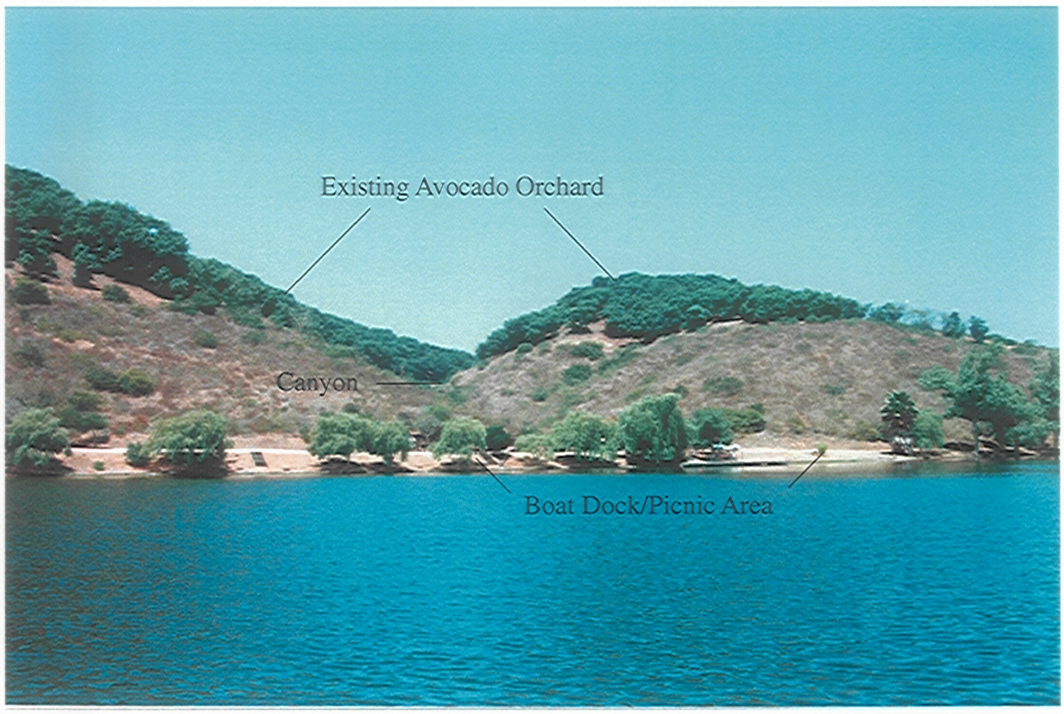


View Point Key Map

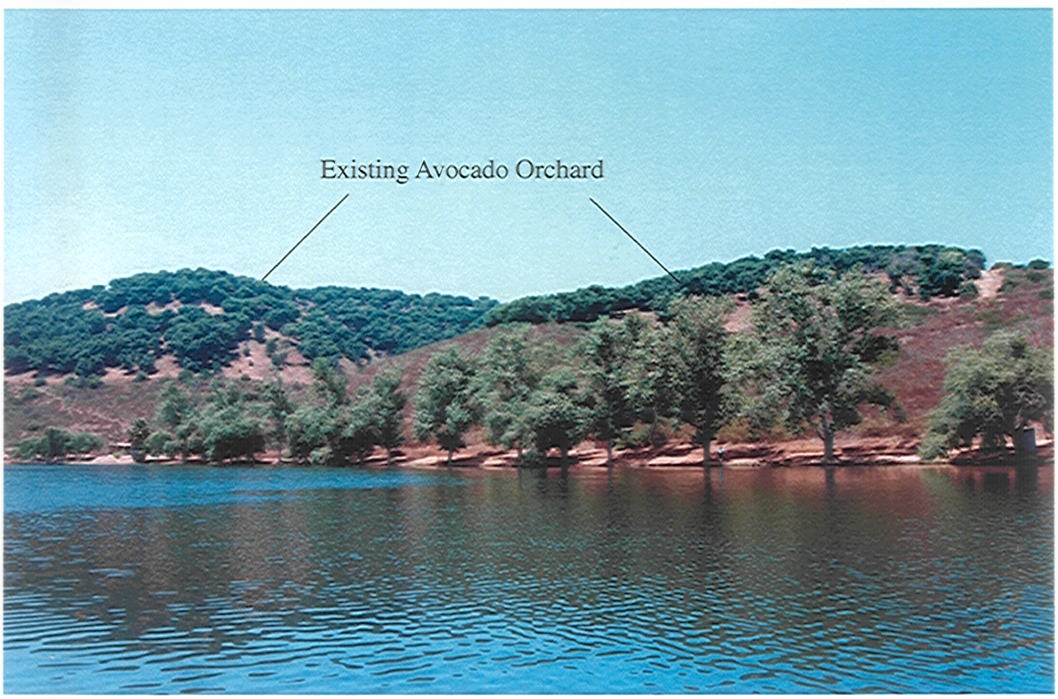
LAKE SAN MARCOS ESTATES

Figure 2.5-1

HELIX



View of project site from viewpoint 1.



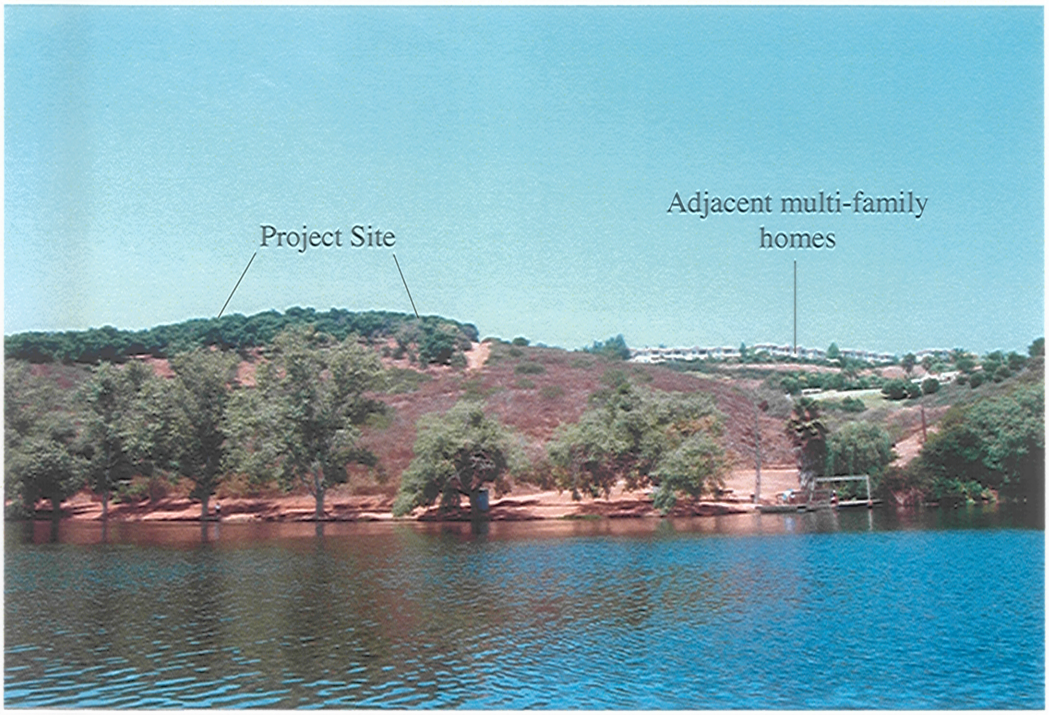
View of project site from viewpoint 2.

Existing Site Photographs

LAKE SAN MARCOS ESTATES

Figure 2.5-2a

HELIX



View of project site from viewpoint 3.

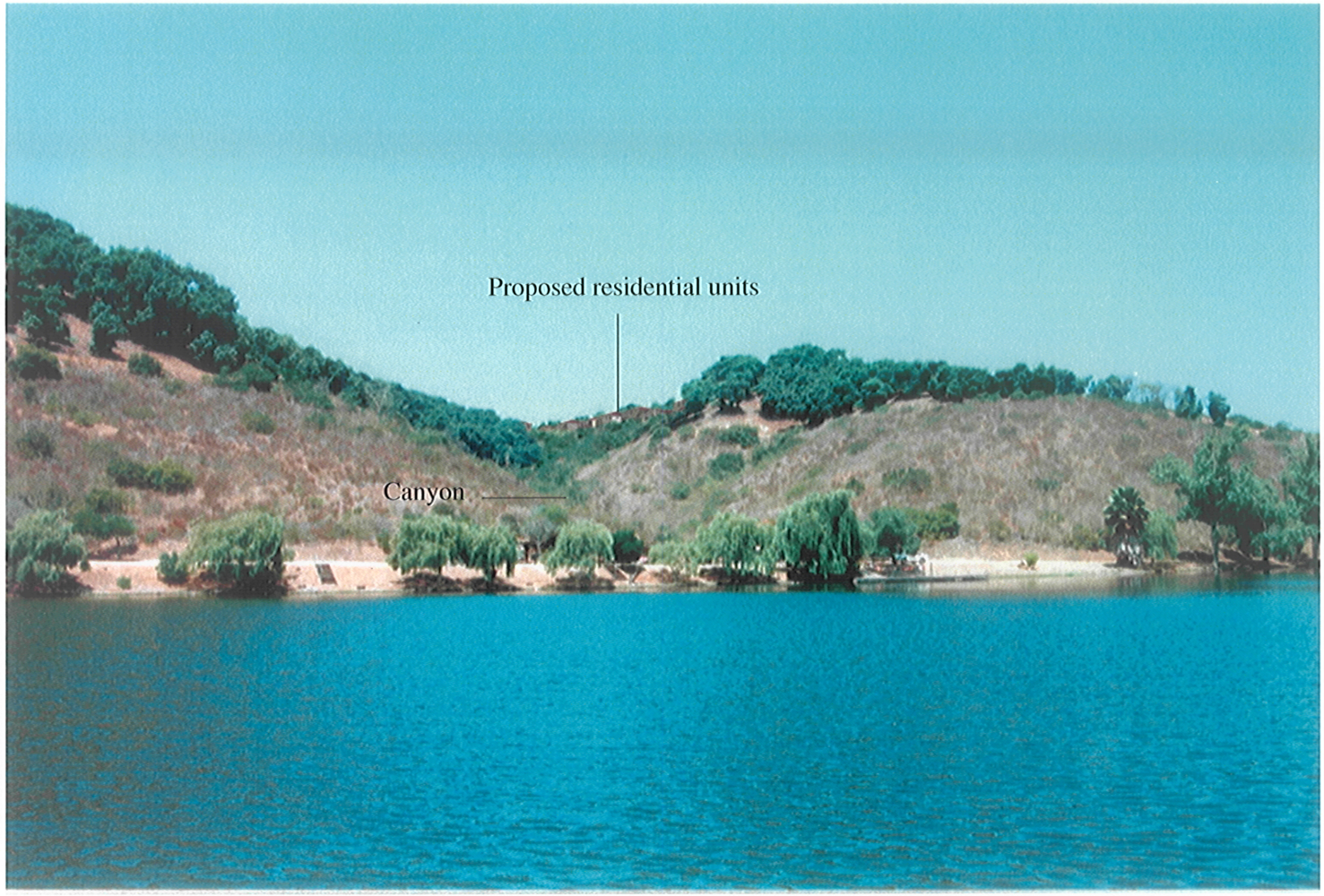
View of project site from viewpoint 4.

Existing Site Photographs

LAKE SAN MARCOS ESTATES

Figure 2.5-2b

HELIX



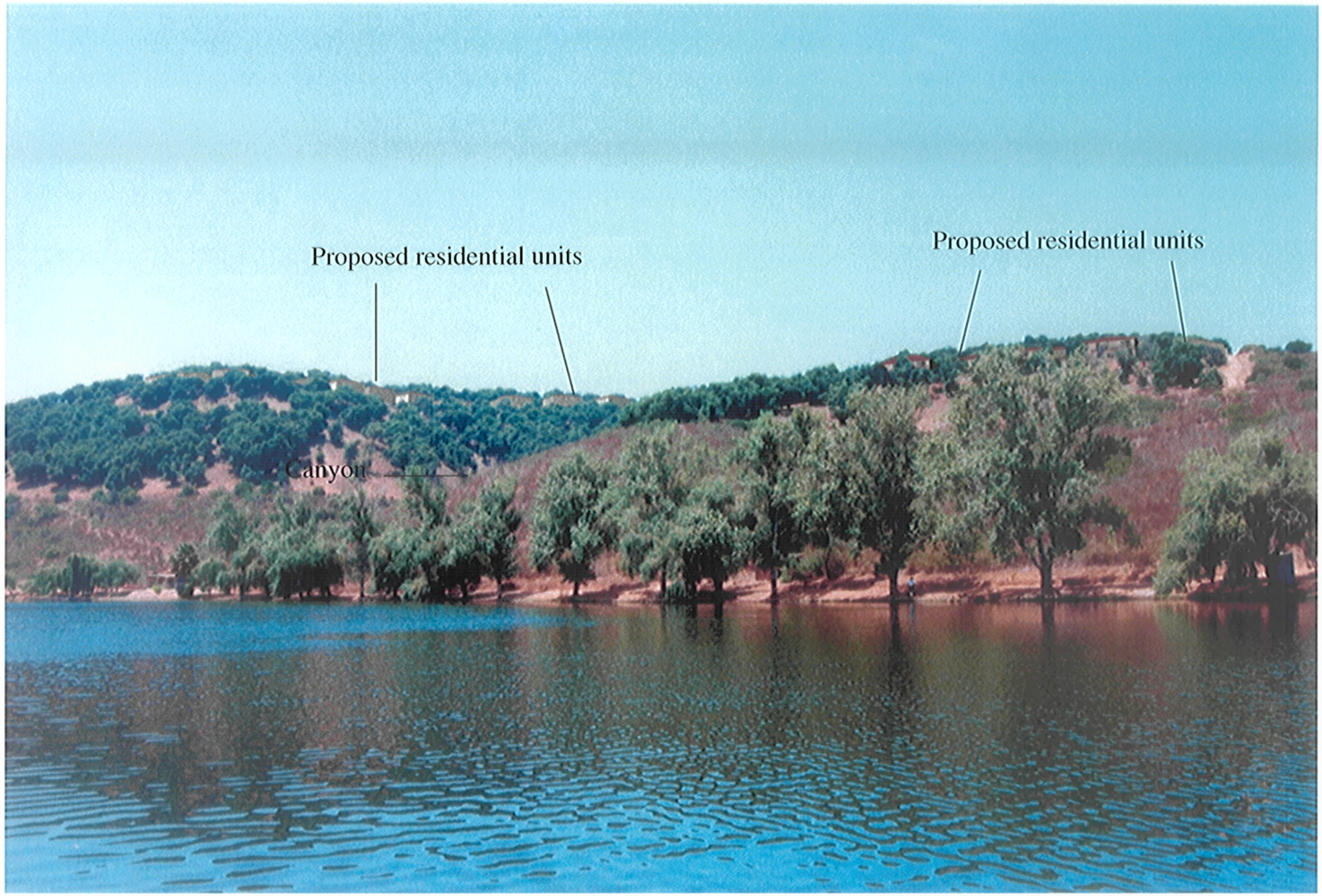
Visual simulation of proposed project from viewpoint 1.

Photo Simulation

LAKE SAN MARCOS ESTATES

Figure 2.5-3a

HELIX



Visual simulation of proposed project from viewpoint 2.

Photo Simulation
LAKE SAN MARCOS ESTATES
Figure 2.5-3b

HELIX

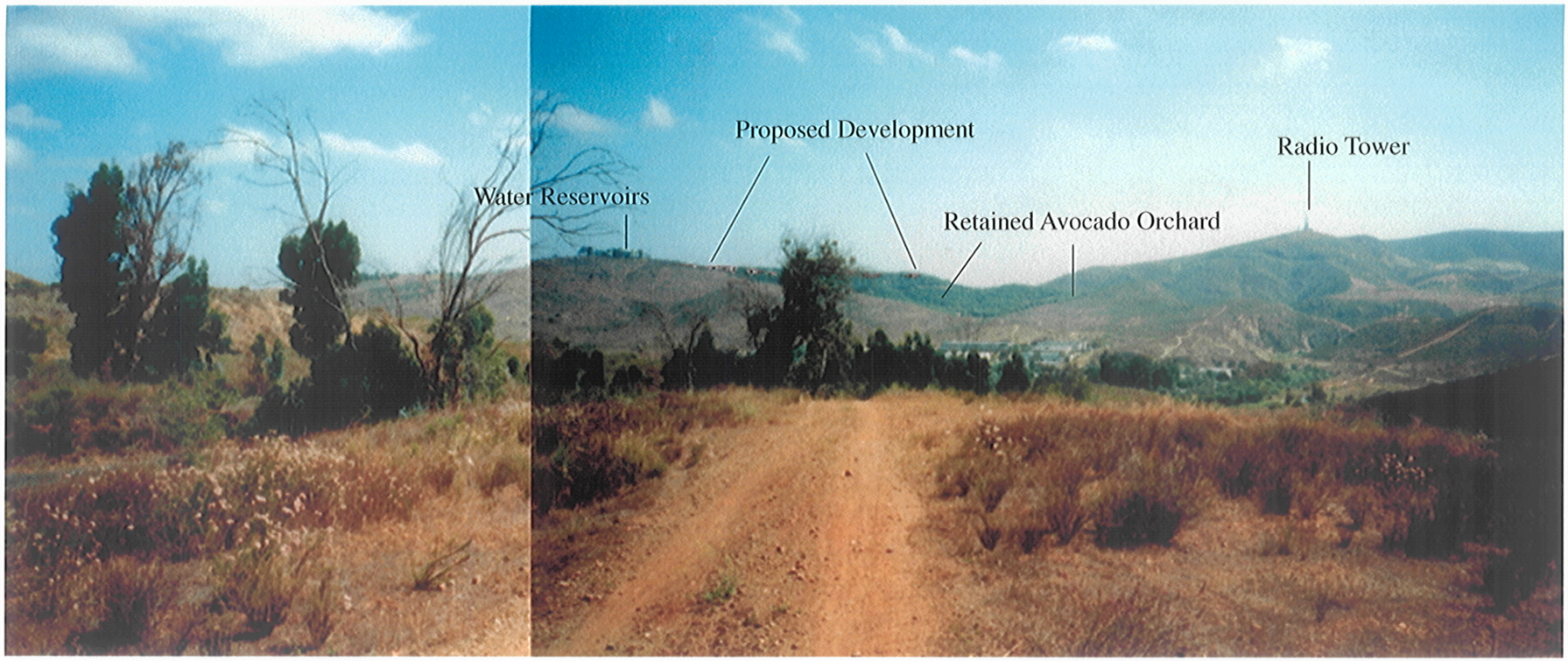
Visual simulation of proposed project from viewpoint 3.

Photo Simulation

LAKE SAN MARCOS ESTATES

Figure 2.5-3c

HELIX



Visual simulation of proposed project from viewpoint 4.

Photo Simulation

LAKE SAN MARCOS ESTATES

Figure 2.5-3d

HELIX

CHAPTER 3.0 – CUMULATIVE IMPACTS

The State CEQA Guidelines (Section 15355) indicate that a cumulative impact consists of an impact, which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. Section 15130 of the State CEQA Guidelines requires that an EIR address cumulative impacts of a project when the project's incremental effects would be cumulatively considerable, wherein "cumulatively considerable" refers to the individual project's effects in conjunction with those caused by past, current, and probable projects. The potential for cumulative impacts is discussed for each environmental issue addressed in Chapter 2.0, with a detailed analysis provided for issues resulting in a significant cumulative impact with the addition of the project, or for issues with significant cumulative impacts without the Proposed Project (i.e., Traffic).

3.1 List of Past, Present and Reasonably Anticipated Future Projects in the Project Area

Projects in the vicinity of the proposed Lake San Marcos Estates Project considered for the analysis of localized cumulative impacts (i.e., land use, geology [erosion], aesthetics and landform alteration) are mapped on Figure 3.1-1 and listed in Table 3.1-1. Local cumulative projects considered in this analysis were selected for the noted cumulative impact issues based on the proximity of those projects (e.g., nearby communities, adjacent topography, same viewsheds, etc.). For example, for the purpose of evaluating cumulative aesthetics and landform alteration impacts, projects located within the same visual setting and viewshed were considered. However, for the purposes of cumulative traffic impacts, a larger geographic area was considered that includes a total of 79 projects utilizing the same local roadways, arterials and highways as the proposed project. The geographic considerations for determining the cumulative effects vary from resource area to resource area. The resource-specific considerations are addressed within each environmental issue area discussed in this section.

The analysis of cumulative impacts associated with regional issues (i.e., air quality, water quality and biology) was based on regional plans and policies, such as the State Implement Plan (SIP) and Regional Air Quality Standards (RAQS) for air quality, the Basin Plan for water quality, and the Natural Community Conservation Planning (NCCP) program and Habitat Loss Permit (HLP) process for biology. Cumulative air quality impacts are addressed through reviewing individual projects and determining if they are in compliance with regional air quality emissions standards. The SIP and RAQS projected emissions and thresholds are based upon planned regional growth such as the growth anticipated in the adopted County of San Diego General Plan. The RAQS and SIP are available for public review at the San Diego Air Pollution Control District. Cumulative water quality impacts are addressed through the criteria and standards in the RWQCB San Diego Basin Plan, which are applied on a project-by-project basis. The Basin Plan, which provides guidelines for all of San Diego County, incorporates local land use and growth assumptions, particularly in relationship to impervious surfaces (development) and planned drainage systems. The adopted San Diego County General Plan is the local land use plan assumed in the Basin Plan. The Basin Plan is available for public review at the RWQCB (Region 9) office in San Diego. Cumulative impacts to biological resources (e.g., sensitive habitat, plant species, wildlife and wildlife movement corridors) are addressed through individual project compliance with NCCP planning guidelines and the HLP process limitation on cumulative take of Diegan coastal sage scrub habitat. As a subarea plan has not yet been adopted for the project study area, cumulative biological resource impacts are addressed through individual project compliance with the NCCP guidelines. The NCCP takes into consideration the San Diego County General Plan (along with four other general plans in southern California) for determining where and how regional biological resources are protected from impacts. The NCCP is available for public review at the County of San Diego DPLU and at the regional CDFG and USFWS offices.

3.2 Land Use and Planning/Community Character

Significant cumulative impacts to community character are often the result of several independent actions which, when examined individually, may not be considered to be significant. While the projects listed in Table 3.1-1 are generally compatible with long-range planning goals for development, completion of these various residential and mixed use projects are anticipated to increase the density and urban intensity of the area which may alter the overall character of the area over the long-term. As discussed in Section 6.1.1, the Proposed Project is compatible with the rural and suburban character of surrounding land uses because it proposes to retain approximately 90 acres of the property as open space and agricultural uses and develop the site with low-density residential uses that are compatible with adjacent uses. No significant land use planning or community character impacts were identified and the Proposed Project's relatively small size compared to other nearby cumulative projects means that the proposed residential development would not contribute to a significant community character impact.

3.3 Geology

The project site does not have any unique geologic features and would not result in significant direct impacts to geologic resources; thus, the project would not contribute to cumulative impacts to geologic resources. Potential impacts from geologic hazards or short- and long-term erosion from this project or any of the projects listed in Table 3.1-1, would be mitigated by standard remedial grading measures, seismic safety building design and erosion control measures. In addition, each project, as with the Proposed Project, will be required to implement specific site mitigation as necessary, such as temporary or permanent erosion control devices, which would reduce the potential for significant cumulative erosion impacts. As a result, no cumulatively significant geology impacts will occur.

3.4 Water Resources

As discussed in Subchapter 2.2, the Proposed Project would not result in any significant impacts to local drainage patterns, runoff volumes or velocities. Specifically, existing drainage patterns within and from the site would not be substantially altered, and post-development runoff from the site would continue to flow into Lake San Marcos, San Marcos Creek and (ultimately) Batiquitos Lagoon. Runoff flowing west and east from the site would be incrementally increased in volume over current flows, although no associated capacity or flooding impacts would result. Runoff flowing south from the site would be reduced slightly in volume, with associated capacity and flooding impacts thus not an issue. A number of project design and mitigation measures have been identified to further reduce impacts related to runoff volumes and velocities, including the use of energy dissipators at all discharge points. As with erosion and sedimentation impacts, cumulative projects within the limits of the San Diego Basin Plan (along with the Proposed Project) will be required to implement, as necessary, specific site mitigation, such as installation of energy dissipation structures and retention of storm water flows, which would reduce the potential for significant cumulative drainage or hydrology impacts. Based on these conditions, no significant cumulative impacts related to local drainage patterns, runoff volumes or velocities are anticipated from project implementation.

A number of potentially significant water quality impacts related to the long-term generation of urban contaminants were identified for the Proposed Project in Subchapter 2.2. These impacts would be reduced below a level of significance through required conformance with existing regulatory guidelines (e.g., NPDES permitting) and implementation of identified mitigation measures. Under these conditions, the generation and discharge of urban contaminants from the site would be minimized, and the project is expected to meet all applicable regulatory requirements (including RWQCB Basin Plan water quality objectives). Accordingly, significant cumulative impacts associated with water quality are not anticipated

from project implementation. Because the noted design and mitigation measures would not result in 100 percent removal of urban contaminants; however, the Proposed Project would potentially contribute to a cumulative reduction of regional water quality. Likewise, it can be expected that other projects in the same drainage basin would also contribute to a cumulative reduction in regional water quality. However, the level of such regional water quality effects would depend on factors such as the severity of impacts from individual sources, and the existing quality of receiving waters. Effectively quantifying and addressing potential cumulative impacts would entail both avoidance/mitigation of contaminant discharge at individual sources (i.e., as identified for the Proposed Project which includes mitigation such as installation of contaminant filtering devices and incorporation of infiltration areas or devices into site design), as well as monitoring and analysis of water quality cause and effect relationships on a regional scale. The Basin Plan objectives are intended to address water quality on a regional scale and thus, compliance with the Basin Plan objectives on individual projects will effectively improve regional, cumulative water quality conditions. Thus, the cumulative water quality impacts are potentially adverse but not significant, as each project in the Basin would be required to implement site-specific mitigation measures in compliance with the RWQCB Municipal Storm Water Permit (Order 2001-01), which is designed to implement basin plan objectives, and in compliance with the County's Interim Guideline for Post Construction BMPs.

3.5 Air Resources

As discussed in Subchapter Section 6.1.2, the Proposed Project does not result in any significant direct impacts to air quality, either over the short-term (construction) or long-term (operational). As noted in Section 6.1.2, regional air quality standards are based on long-range planning and development intensity, including development projects such as those listed in Table 3.1-1. Land use intensification, as a result of the proposed General Plan Amendment (GPA) and Rezone is consistent with the Regional Air Quality Strategy (RAQS) and State Implementation Plan (SIP) standards. Those plans were developed based upon the SANDAG series 8 growth forecasts when the plans were adopted, including the County of San Diego General Plan. The proposed GPA would result in an increase in 60 dwelling units above what was envisioned in the General Plan, and likewise in the Series 8 forecasts. Air quality is primarily a regional or basin-wide issue and a project would be inconsistent with the RAQS and SIP if it measurably impedes attainment of clean air standards, even if the measured increment is small. The County of San Diego recommends that any project that creates 55 pounds per day of ozone precursors should be considered to have an individually significant impact. (The 55 lb./day threshold is from the South Coast Air Quality Management District "CEQA Air Quality Handbook.") A typical single-family household generates a little less than 0.2 pounds per day of vehicular emissions contributing to regional smog formation. Sixty homes (the increase as a result of the proposed GPA) would represent an increase of approximately 10 pounds per day, or less than 20 percent of what would constitute an individually significant project. With the continued emissions reductions from a cleaner future vehicle fleet, that percentage is anticipated to reduce further. The projected emissions from the additional 60 dwelling units (less than 20 percent of the threshold) is a de minimis deviation from the adopted growth projections. Implementation of the Proposed Project and other projects envisioned in adopted general plans (e.g., those listed in Table 3.1-1) would not result in a conflict with or obstruct the implementation of RAQS or the SIP, and would not result in a cumulatively significant air quality impact.

3.6 Transportation/Circulation

The following discussion of potential cumulative transportation/circulation impacts is based on a traffic study completed for the project by Darnell & Associates, Inc. dated August 7, 2000. The cumulative traffic analysis is based upon a review of project traffic combined with traffic from past, present and future projects in proximity to the project site, utilizing the same circulation system. The cumulative

projects are listed in Table 7 in Appendix B of the traffic study. A copy of the traffic study is contained in Appendix J.

3.6.1 Existing Conditions

Existing roadway characteristics, average daily traffic (ADT), peak hour traffic volumes, and levels of service (LOS) are discussed in Section 2.5.1.

3.6.2 Thresholds of Significance

For the purpose of this analysis, the *SANTEC/ITE Guidelines for TIS in the San Diego Region,* February 29, 2000 Draft was used to determine the significance of cumulative traffic impacts. As discussed in Section 2.5.2, roadways and intersections experiencing LOS D, E or F with the addition of cumulative project traffic are subject to volume to capacity (v/c) ratio and delay thresholds. An increase in v/c ratio greater than 0.02 or an increase in delay of more than 2 seconds on roadway segments/intersections is considered to be significant. It should be noted that these guidelines are consistent with the thresholds of significance developed by the City of San Diego and utilized by the County of San Diego for roadway segments operating at LOS E or F.

3.6.3 Analysis of Project Effects and Determination as to Significance

3.6.3.a Impacts to Local Roadway Segments and Intersections from Cumulative Project Traffic

Existing Plus Cumulative Projects

The cumulative projects traffic was added to existing traffic volumes to determine the short term cumulative, without project, conditions. The resulting existing plus cumulative projects traffic volumes were then analyzed. The results of the roadway segment analysis are shown in Table 3.6-1 and the results of the intersection capacity analysis are shown in Table 3.6-2.

Roadway Segments: Traffic volumes associated with each of the cumulative projects in the study area are provided in Appendix B to the traffic study (Appendix J). As shown in Table 3.6-1, seven segments are projected to operate at LOS D, E or F with the addition of cumulative projects traffic. When the significance threshold of 0.02 v/c increase is applied, all of the roadway segments exceed this threshold. The increases in v/c would be 0.16 or more which are greater than the allowable two percent increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. Therefore, the addition of cumulative projects traffic on local roadway segments would be significant without the Proposed Project. The segments of Lake San Marcos Drive and Camino del Arroyo analyzed would continue to operate at LOS C or better under existing plus cumulative projects conditions.

Intersections: As shown in Table 3.6-2, two intersections, Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe Road/Melrose Drive, are projected to operate at LOS D during the AM peak hour and LOS F during the PM peak hour with the addition of cumulative projects traffic. The projected increase in delay at these intersections is 17.3 seconds or more and is greater than the allowable two second increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. Therefore, impacts to local intersections would be significant without the Proposed Project. The intersections of Rancho Santa Fe Road/Lake San Marcos Drive and Rancho Santa Fe Road/Camino del Arroyo would operate at LOS C under existing plus cumulative projects conditions.

Existing Plus Cumulative Projects Plus Project

The project traffic was added to the existing plus cumulative traffic volumes to determine the short term cumulative, with project, conditions. The results of the roadway segment analysis are depicted in Table 3.6-1 and the results of the intersection capacity analysis are shown in Table 3.6-2.

Roadway Segments: As shown in Table 3.6-1, seven segments are projected to operate at LOS D, E or F with the addition of project traffic to existing plus cumulative projects traffic. However, when the significance threshold of 0.02 v/c increase is applied, none of the roadway segments exceed this threshold due to the project. The increases in v/c would be 0.02 or less which are equal to or less than the allowable two percent increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. The segments of Lake San Marcos Drive and Camino del Arroyo analyzed would continue to operate at LOS C or better under existing plus cumulative projects plus project conditions. Therefore, the addition of project traffic to existing plus cumulative projects traffic on local roadway segments would be less than significant due to the Proposed Project.

The incremental impacts of the project on local roadway segments, as shown on Table 3.6-1 and discussed above, are not cumulatively significant as they are small and their incremental effect is not considerable when added to local traffic volumes. The project's contribution to the cumulative impact is not cumulatively considerable because the increase in volume-to-capacity ratio due to the addition of the project's traffic does not exceed the applicable threshold. The significant cumulative impact caused by other projects would exist with or without the Proposed Project.

Intersections: As shown in Table 3.6-2, two intersections, Rancho Santa Fe Road/San Marcos Boulevard and Rancho Santa Fe Road/Melrose Drive, are projected to operate at LOS D during the AM peak hour and LOS F during the PM peak hour with the addition of project traffic to existing plus cumulative projects traffic. However, the projected increase in delay at these intersections is 1.9 seconds or less which is less than the allowable two second increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. The intersections of Rancho Santa Fe Road/Lake San Marcos Drive and Rancho Santa Fe Road/Camino del Arroyo would operate at LOS C under existing plus cumulative projects plus project conditions. Therefore, impacts to local intersections would be less than significant.

The incremental impacts of the project on local intersections, as shown on Table 3.6-2 and discussed above, are not cumulatively significant as they are small and their incremental effect is not considerable when added to traffic volumes in area intersections. The project's contribution to the cumulative impact is not cumulatively considerable because the increase in intersection delay with the addition of the project's traffic does not exceed the applicable threshold. The significant cumulative impact caused by other projects would exist with or without the Proposed Project.

3.6.3.b Circulation Impacts

Local Circulation

None of the cumulative projects evaluated in this analysis is located in the immediate vicinity of the Proposed Project site. Thus, as shown on Table 3.6-1, no increase in ADT would occur on Camino del Arroyo as a result of cumulative projects traffic. Therefore, no significant cumulative impacts to local circulation would occur.

3.6.3.c Buildout Impacts

In order to assess roadway capacity and operation in the future, a daily traffic assessment was conducted for Buildout conditions. Darnell & Associates obtained forecasted buildout volumes for area roadways from the County of San Diego Department of Public Works. The forecast volumes are from the Elfin Forest/Harmony Grove Buildout Model. The roadway network, as previously described in Section 2.5.1, assumes segments will be improved to their ultimate classifications. Table 3.6-3 identifies assumptions of roadway characteristics in the vicinity of the project under Buildout. Buildout (post-2020) volumes with and without project traffic were analyzed and are summarized in Table 3.6-3. Ultimate roadway classifications were obtained from the City of San Marcos.

Table 3.6-3 includes traffic forecasts for Camino del Arroyo which was not included in the network model for the area. However, Buildout projections were determined based upon the following: (1) it operates as a Residential Collector street, and; (2) research of land use for the area shows that this area is fully developed (e.g., areas planned for development exist or are in the process of being developed) except for the project site; therefore, the existing plus cumulative projects plus project traffic conditions represent buildout conditions.

As shown in Table 3.6-3, with the exception of San Marcos Boulevard, all roadways are expected to operate at LOS C or better under Buildout conditions with or without the Proposed Project. The segments of San Marcos Boulevard west and east of Rancho Santa Fe Road operate at LOS E under Buildout conditions with or without the Proposed Project. Project traffic would not increases the v/c ratio on the segments of San Marcos Boulevard that would operate at LOS E under Buildout conditions and therefore is not considered significant.

3.6.4 Mitigation Measures

Significant cumulative impacts to local roadways segments and intersections would occur with or without the Proposed Project. As discussed above, the incremental impacts of the project on local roadway segments and intersections are not cumulatively significant as the project's traffic contribution is small and the increase in volume-to-capacity ratios (road segments) and intersection delays do not exceed the applicable thresholds. No significant cumulative traffic impacts are generated by the Proposed Project, thus no mitigation measures specific to the Proposed Project are required.

3.6.5 Conclusions

Significant cumulative impacts to local roadways segments and intersections would occur with or without the Proposed Project. As discussed above, the incremental impacts of the project on local roadway segments and intersections are not cumulatively considerable as they are small and the incremental effect would not substantially change or contribute to the significant cumulative impact.

3.7 Biological Resources

The Proposed Project would result in a total loss of 0.3 acre of Diegan Coastal Sage Scrub habitat, most of which is already disturbed. In exchange for the 0.3 acre of impacts, a total of 13.7 acres of Diegan coastal sage scrub habitat is proposed to be placed in a permanent Biological Open Space Easement. Only one individual of the one observed sensitive species (white coast ceanothus, *Ceanothus verrucosus*) would be impacted but several other sensitive species could be impacted but were not observed due to survey limitations. The amount of habitat or numbers of sensitive species that would be impacted do not represent a significant amount or number relative to the number of individuals and the acreage of habitat

in the project vicinity. Regionally, the NCCP Act requires that, prior to adoption of an NCCP subarea plan, a proposed project conform to NCCP planning guidelines verified through the making of findings of fact pursuant to Section 4(d) of FESA. The requirements of the NCCP Act and 4(d) process are designed to maintain the viability of ecosystems and future regional preserve design such that cumulative impacts of projects to coastal sage scrub, other habitats, and sensitive species are not significant. Further, the limitation of the allowable take of Diegan coastal sage scrub habitat to five percent of that remaining as of the date of the HLP ordinance (March 30, 1994) limits cumulative impacts to an amount not considered significant by the USFWS and CDFG. Since the Proposed Project would comply with the NCCP guidelines and the 4(d) Findings of Fact have been made (circulated for public review January 13, 2000 through February 27, 2000), the project's impacts to coastal sage scrub and its associated fauna and flora would not have a cumulatively significant impact on future viability of these species or future regional preserve design. As a result, the project does not have significant cumulative impacts to biological resources.

3.8 Aesthetics and Landform Alteration

The cumulative projects listed in Table 3.1-1 consist primarily of single- and multi-family residential projects, located within areas designated for residential land uses. Each project is evaluated for compatibility with the surrounding visual setting, potential impacts to public viewsheds and corridors and potential impacts to unique topographic features due to project site grading and development. No significant aesthetic impacts were identified for the Proposed Project because the low-density residential development would be a continuation of the existing residential neighborhoods to the north and northeast, would be surrounded by retained avocado groves to the south and east, and does not result in a significant impact to public views of significant visual resources. The Proposed Project was determined to result in a potentially significant but mitigable landform alteration impact due to the proposed grading and construction of a 116-foot high fill slope within an easterly canyon. This manufactured slope is not visible from public vantage points. Nonetheless, site-specific mitigation is recommended to reduce the visibility of the slope (refer to Section 2.5.4 for proposed mitigation measures). Similar to the Proposed Project, cumulative projects with impacts to natural topography and resulting landform alteration would be mitigated on a project-specific basis by preserving natural ridgelines, re-vegetating impacts to natural landscapes, minimizing encroachment into secondary ridgelines, contour grading to mimic the natural topography and controlling building heights. The Proposed Project, along with other proposed development projects in the vicinity (Figure 3.1-1) would not result in significant aesthetic or landform alteration impacts because of the site-specific mitigation measures. The cumulative projects listed in this analysis do not propose incompatible land uses from the underlying land use designations, are not located in areas designated for open space preservation or ridgeline protection, and do not block protected views toward, or located within areas containing significant visual resources. No significant cumulative aesthetic or landform alteration impact is anticipated as a result of Proposed Project implementation.

3.9 Noise

As noted in Subchapter 2.4, the Proposed Project would result in short-term potentially significant noise impacts associated with drilling for blasting charges. Impacts are mitigated by use of temporary barriers or limiting the duration of drilling time. Short-term construction noise generally impacts immediately surrounding sensitive receptors, if present. The potential for cumulative noise impacts on adjacent residences would not occur as the cumulative projects listed in Table 3.1-1 are not located adjacent to the project site. Those projects, when considered together, do not have the potential to impact the same sensitive receptors (residential uses) concurrently. Therefore, no significant cumulative impact is anticipated for short-term construction noise.

Table 3.1-1
CUMULATIVE PROJECTS LIST

MAP REF. NO.	PROJECT NAME	PROJECT LOCATION	PROJECT DESCRIPTION
1	Meadowlarke Estates	Melrose/Alga Estates	180 single-family dwelling units
2	Rancho Carillo	South of Palomar Airport Rd	1,033 single-family dwelling units, 783 multi-family dwelling units
3	San Marcos Highlands	Las Posas Ave.	238 single-family dwelling units
4	Rancheros	w/o Questhaven/Rancho Santa Fe	263 single-family dwelling units
5	San Elijo Ranch	n/o future Questhaven Rd.	3,400 dwelling units
6	University Commons	Rancho Santa Fe Rd./Questhaven, s/o La Costa Meadows Dr.	471 single family dwelling units, 753 multi-family units, 25,000 s.f. commercial uses
7	San Elijo Ridge	N and S sides of Questhaven Rd., e/o Elfin Forest Rd.	260 single-family homes
8	Quail Ridge	s/o Questhaven Rd., east of Elfin Forest Rd.	69 single-family dwelling units on 234.5 acres

Table 3.6-1
EXISTING PLUS CUMULATIVE PROJECTS AND
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT ROADWAY SEGMENT LEVEL OF SERVICE

SEGMENT	CLASS	CAPACITY	EXISTING CONDITIONS			EXISTING + CUMULATIVE PROJECTS					EXISTING + CUMULATIVE PROJECTS + PROJECT				
			ADT	v/c	LOS	ADT	v/c	LOS	Δ v/c	Sig.?[4]	ADT	v/c	LOS	Δ v/c	Sig.?[4]
Rancho Santa Fe Road[1]															
- n/o San Marcos Blvd.	4M	40,000	29,293	0.73	D	40,293	1.01	F	0.28	Yes	40,671	1.02	F	0.01	No
- n/o Lake San Marcos Dr.	4M	40,000	35,743	0.89	E	56,153	1.40	F	0.51	Yes	57,035	1.42	F	0.02	No
- n/o Camino Del Arroyo	4M	40,000	34,804	0.87	E	55,074	1.38	F	0.51	Yes	55,830	1.40	F	0.02	No
- n/o Melrose Dr. (existing)	2C	15,000	31,942	2.13	F	52,212	3.48	F	1.35	Yes	52,401	3.49	F	0.01	No
- n/o Melrose Dr. (improved)	4M	40,000	31,942	0.80	D	52,212	1.31	F	0.51	Yes	52,401	1.31	F	0.00	No
San Marcos Boulevard[1]															
- w/o Rancho Santa Fe Rd.	4M	40,000	29,846	0.75	D	36,456	0.91	E	0.16	Yes	36,708	0.92	E	0.01	No
- e/o Rancho Santa Fe Rd.	4M	40,000	40,146	1.00	F	58,126	1.45	F	0.45	Yes	58,378	1.46	F	0.01	No
Lake San Marcos Drive[2]															
- e/o Rancho Santa Fe Rd.	4C	34,200	7,000	0.21	A	7,140	0.21	A	0.00	N/A	7,266	0.21	A	0.00	N/A
Camino Del Arroyo[2]															
- e/o Rancho Santa Fe Rd.	RC	4,500[3]	1,743	N/A	< C	1,743	N/A	< C	N/A	N/A	2,688	N/A	< C	N/A	N/A
- e/o Hermisito Drive	RC	4,500[3]	680	N/A	< C	680	N/A	< C	N/A	N/A	1,940	N/A	< C	N/A	N/A

Class = Capacity at upper level of Level of Service E per City of San Marcos or County of San Diego Public Road Standards.
4M = Four-Lane Major, 4C = Four-Lane Collector, 2C = Two-Lane Collector, RC = Residential Collector.
LOS = Level of Service.
v/c = Volume to Capacity Ratio.
Δ v/c = Change in Volume to Capacity Ratio.
n/o = north of, w/o = west of, e/o = east of.
N/A = Not Applicable because LOS is C or better.
[1]Segment located in the City of San Marcos.
[2]Segment located in the County of San Diego.
[3]Level of Service are not applied to Residential Collectors, LOS C design volume is <4,500 ADT.
[4]Significance is based on the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*, February 29, 2000 Draft.
Source: Darnell & Associates, Inc. August 7, 2000.

Table 3.6-2
EXISTING PLUS CUMULATIVE PROJECTS AND
EXISTING PLUS CUMULATIVE PROJECTS PLUS PROJECT INTERSECTION LEVEL OF SERVICE

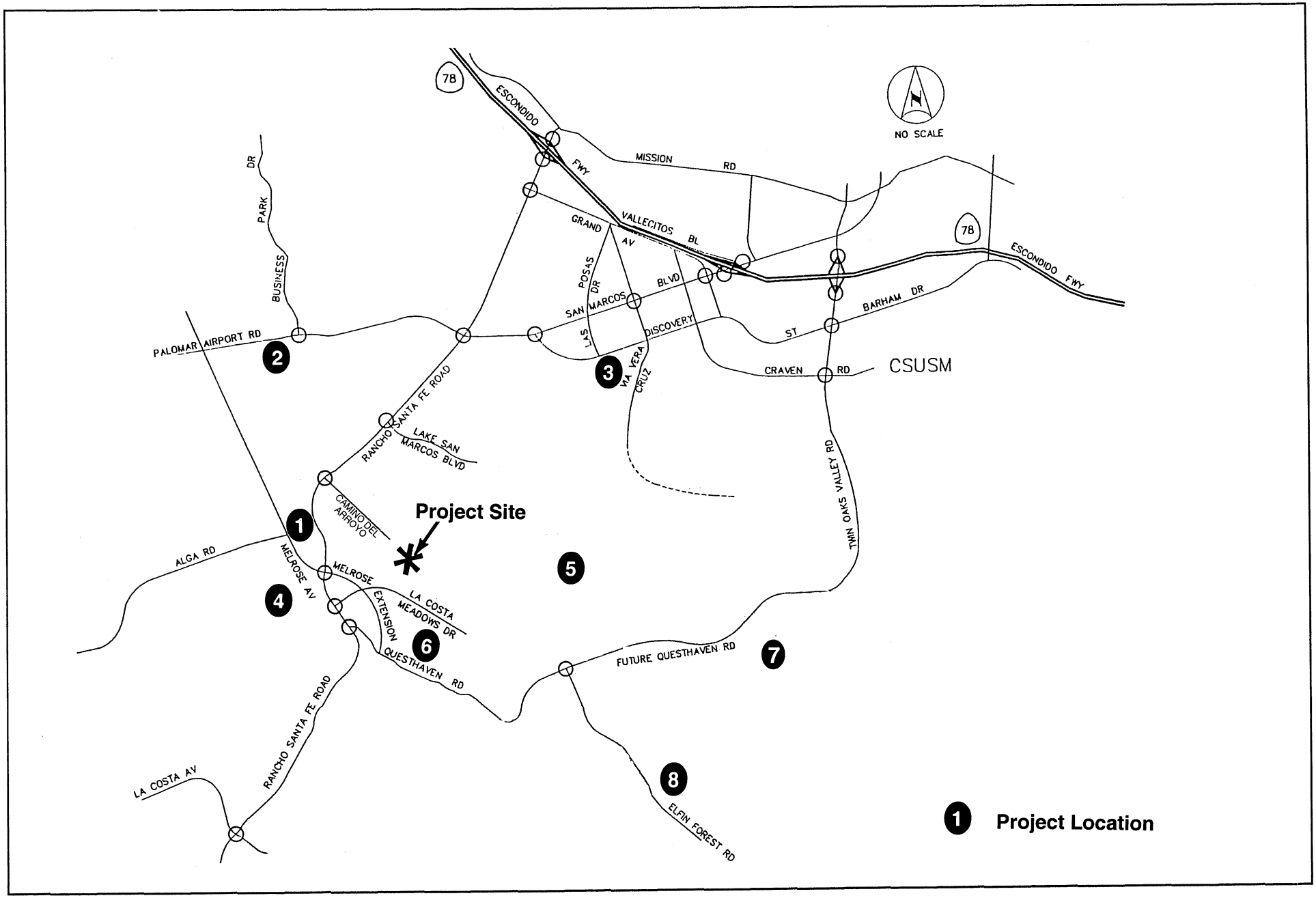
SIGNALIZED INTERSECTION	EXISTING CONDITIONS[1]				EXISTING + CUMULATIVE PROJECT CONDITIONS[2]								EXISTING + CUMULATIVE PROJECTS + PROJECT CONDITIONS[3]							
	AM Peak Hour		PM Peak Hour		AM Peak Hour				PM Peak Hour				AM Peak Hour				PM Peak Hour			
	Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Sig.?[4]	Delay	LOS	Δ Delay	Sig.?[4]	Delay	LOS	Δ Delay	Sig.?[4]	Delay	LOS	Δ Delay	Sig.?[4]
Rancho Santa Fe Road @																				
- San Marcos Boulevard	33.3	C	51.3	D*	50.6	D*	17.3	Yes	323.6	F	272.3	Yes	51.5	D*	0.9	No	325.5	F	1.9	No
- Lake San Marcos Drive	16.1	B	21.8	C	22.1	C	6.0	N/A	27.6	C	5.8	N/A	25.2	C	3.1	N/A	31.4	C	3.8	N/A
- Camino Del Arroyo	13.6	B	18.1	B	22.8	C	9.2	N/A	28.0	C	9.9	N/A	23.5	C	0.7	N/A	29.4	C	1.4	N/A
- Melrose Drive	18.4	B	17.9	B	39.0	D*	20.6	Yes	121.6	F	103.7	Yes	39.8	D*	0.8	No	123.0	F	1.4	No

[1]HCS worksheets can be found in Appendix C.
[2]HCS worksheets can be found in Appendix F.
[3]HCS worksheets can be found in Appendix G.
[4]Significance is based on the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*, February 29, 2000 Draft.
*Intersection has movements that operate at LOS E or F.
N/A = Not Applicable because LOS is C or better.
Delay = measured in seconds per vehicle.
Δ Delay = Change in seconds of delay.
Source: Darnell & Associates, Inc. August 7, 2000.

Table 3.6-3
BUILDOUT ROADWAY SEGMENT LEVEL OF SERVICE

SEGMENT	ULT. CLASS	CAPACITY	BUILDOUT			BUILDOUT WITH PROJECT							
			ADT	v/c	LOS	Proj. ADT	Gen. Plan ADTs	Diff.	ADT	Δ v/c	LOS	v/c	Sig.?[4]
Rancho Santa Fe Road[1]													
- n/o San Marcos Blvd.	PA	60,000	38,100	0.64	C	378	162	216	38,316	0.82	C	0.00	N/A
- n/o Lake San Marcos Dr.	PA	60,000	39,200	0.65	C	882	378	504	39,704	0.84	C	0.01	N/A
- n/o Camino Del Arroyo	PA	60,000	31,100	0.52	C	756	324	432	31,532	0.76	C	0.01	N/A
- n/o Melrose Dr.	PA	60,000	26,000	0.43	B	189	81	108	26,108	0.64	B	0.01	N/A
San Marcos Boulevard[1]													
- w/o Rancho Santa Fe Rd.	PA	60,000	51,700	0.86	E	252	108	144	51,844	0.86	E	0.00	No
- e/o Rancho Santa Fe Rd.	PA	60,000	59,400	0.99	E	252	108	144	59,544	0.99	E	0.00	No
Lake San Marcos Drive[2]													
- e/o Rancho Santa Fe Rd.	4C	34,200	10,100	0.30	A	126	54	72	10,172	0.30	A	0.00	N/A
Camino Del Arroyo[2]													
- e/o Rancho Santa Fe Rd.	RC	4,500[3]	2,148	N/A	< C	945	405	540	2,688	N/A	< C	N/A	N/A
- e/o Hermisito Dr.	RC	4,500[3]	1,220	N/A	< C	1,260	540	720	1,940	N/A	< C	N/A	N/A

Class = Capacity at upper level of Level of Service E per City of San Marcos or County of San Diego Public Road Standards.
PA = Prime Arterial, 4C = Four-Lane Collector, RC = Residential Collector.
LOS = Level of Service.
v/c = Volume to Capacity Ratio.
Δ v/c = Change in Volume to Capacity Ratio.
n/o = north of, w/o = west of, e/o = east of.
N/A = Not Applicable because LOS is C or better.
[1]Segment located in the City of San Marcos.
[2]Segment located in the County of San Diego.
[3]Level of Service are not applied to Residential Collectors, LOS C design volume is < 4,500 ADT.
[4]Significance is based on the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region*, February 29, 2000 Draft.
Source: Darnell & Associates, Inc. August 7, 2000.



Cumulative Projects Location Map

LAKE SAN MARCOS ESTATES

Figure 3.1-1

HELIX

CHAPTER 4.0 – PROJECT ALTERNATIVES

4.1 Rationale for Alternative Selection

Section 15126.6(a) of the State CEQA Guidelines requires the discussion of "a reasonable range of alternatives to a project, or the location of a project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The Proposed Project was determined to result in potentially significant impacts related to erosion, water resources, biological resources, landform alteration, and short-term noise. Section 15126(d)(5) also states that "the range of alternatives in an EIR is governed by the 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice." The State CEQA Guidelines provide several factors that should be considered in regard to the feasibility of an alternative; those factors include: (1) site suitability; (2) economic viability; (3) availability of infrastructure; (4) general plan consistency; (5) other plans or regulatory limitations; (6) jurisdictional boundaries; and (7) whether the project applicant can reasonably acquire, control or otherwise have access to the alternative site (if an off-site alternative is evaluated). The alternatives evaluated in detail within this chapter include:

- No Project/No Development Alternative
- No Project/Existing Plan Alternative
- Low Density Alternative

These alternatives are compared to the impacts of the Proposed Project and are assessed relative to their ability to meet the basic objectives of the Proposed Project. As described in Chapter 1.0, the Proposed Project objectives include the following:

1. Develop the project site with approximately 105 residential dwelling units compatible with the scale and character of adjacent and nearby residential developments and at a lower density than the neighborhoods to the north and northeast to provide a reasonable transition between those neighborhoods and the open space to the south of the project site

2. Retain a majority of the project site in its current condition, with producing avocado orchards and native habitat retained to help screen the homes from Lake San Marcos and soften distant views towards the site

3. Provide on-site common use recreational facilities to reduce the demand on other Lake San Marcos Community Association facilities

4. Develop a project at a density that is consistent with the County General Plan and North County Metropolitan Subregional Plan, while retaining a significant amount of open space for preservation and continued agricultural operations

In accordance with CEQA Guidelines Section 15126.6(f)(2), an off-site alternative should be considered if development of another site is feasible and if development of another site would reduce or avoid significant impacts of the Proposed Project. Factors that may be considered when identifying an off-site alternative include the size of the site, its location, the General Plan (or Subregional Plan) land use designation, and availability of infrastructure. The subject 126.1-acre site was considered for this project as it was purchased by the applicant in November 1999 in order to develop it with residential dwelling units and continue the development pattern envisioned by the prior property owner that developed the neighborhoods to the north and northeast (Lake San Marcos Community). D.R. Horton was selected by

the previous property owner to purchase the site and complete the Lake San Marcos Community development; the project site is the last undeveloped property within the master community. As such, no off-site alternative was pursued by the project applicant. CEQA Guidelines Section 15126.6(f)(2)(A) states that a key question in looking at an off-site alternative is "...whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location." Selection of another parcel in the general vicinity of the project site would have likely resulted in similar or greater impacts than the Proposed Project, such as the potential effects to erosion and landform alteration (varied topography in this part of the County), water quality (San Marcos Creek drainage basin) and short-term blasting noise (abundance of Santiago Peak formation in the area). It is also likely that an off-site alternative would have resulted in a greater impact to biological resources due to the abundance of native habitat on undisturbed parcels. The project site configuration and retention of both the agricultural easement and biological open space easement result in minimal (0.3 acre) impacts to native habitat. An off-site alternative was therefore rejected since the project site was purchased in order to complete the Lake San Marcos Community development as planned by the original property owner and because an alternative site in the area would not substantially lessen impacts anticipated with the Proposed Project.

4.2 No Project/No Development Alternative

4.2.1 No Project/No Development Alternative Description

In accordance with Section 15126.6(e) of the CEQA Guidelines, the No Project Alternative includes a discussion of: (1) the existing conditions at the time the NOP is published; and (2) circumstance under which the project does not proceed, taking into account what would be reasonably expected to occur in the foreseeable future by others (e.g., in accordance with the General Plan and Subregional Plan). This Subchapter evaluates Scenario 1, which is a No Project or No Development Alternative. Scenario 2 is addressed under Subchapter 4.3 No Project/Existing Plan Alternative.

Under the No Project/No Development Alternative, the project site would remain in its current condition as primarily that of an actively farmed avocado orchard. The 14.4 acres of native habitat between the avocado orchard and Lake San Marcos would remain, as would agricultural support facilities and service roads. The proposed residential project would not be constructed, including supporting infrastructure (i.e., roadways and utilities connections) and amenities (swimming pool/spa, ornamental landscaping).

4.2.2 Comparison of the Effects of the No Project/No Development Alternative to the Proposed Project

Under the No Project/No Development Alternative, no General Plan Amendment or Rezone would be necessary. These discretionary actions needed for the Proposed Project were not considered to be significant land use impacts due to the Proposed Project's consistency with the applicable land use goals and policies of the General Plan, Subregional Plan and the City of San Marcos Neighborhood Plan (Section 6.1.1). In addition, the Proposed Project was determined to be compatible with the community character surrounding the project site. The No Project/No Development Alternative would not, however, realize the development potential of the site, based upon the planned residential land uses envisioned in the North County Metropolitan Subregional Plan.

The Proposed Project would result in potentially significant impacts to water quality due to the proximity of the site to Lake San Marcos and San Marcos Creek, and the moderately and steeply sloped site that may generate erosion and sedimentation impacts to receiving waters. The No Project/No Development Alternative would avoid the potential for erosion and water quality impact altogether; however, project impacts were reduced to below a level of significance.

Although the Proposed Project results in significant impacts to Diegan Coastal Sage Scrub, the impacts total 0.03 acre in what is considered mostly disturbed habitat; the impacts are mitigated to below a level of significance by retention of over 14 acres of Diegan Coastal Sage Scrub in an open space easement. The No Project/No Development Alternative would avoid this impact altogether; however this Alternative would not include a 14-acre Biological Open Space Easement, ensuring preservation of habitat along the western slopes of Lake San Marcos. As noted in Subchapter 2.4, the Proposed Project would generate short-term construction-related noise impacts, which would be avoided under a No Project/No Development alternative. However, these impacts were considered short-term and mitigated. This alternative would not preclude the future development of the site in accordance with the land use designation and zoning, and thus may not eliminate future short-term construction impacts from occurring.

No significant aesthetic impacts were identified for the Proposed Project; however, the proposed 116-foot fill slope would result in significant, but mitigated landform alteration impacts. The No Project/No Development Alternative would avoid the significant landform alteration impacts.

No significant cumulative impacts were identified for the Proposed Project and no significant cumulative impacts are anticipated with the No Project/No Development Alternative.

4.2.3 Rationale for Rejection of the No Project/No Development Alternative

The No Project/No Development Alternative would not meet two of the four basic Project objectives, including developing the site with residential uses that are compatible with the adjacent community and developing the property in a manner that is consistent with adopted land use plans for this site. This alternative would meet two of the objectives, however, by retaining a majority of the project site in its current condition, with producing avocado orchards and native habitat. Over the near-term, this alternative would reduce project impacts associated with water quality and erosion, as well as landform alteration impacts. However, over the long-term, future development of the site with a reasonably expected project would result in some environmental impacts commensurate with the Proposed Project, as discussed in Chapter 2.0. This alternative would avoid near-term environmental impacts; however this alternative would not develop the site with General- and Subregional-planned residential uses, thereby not meeting the demand and current County-wide shortage of housing. This alternative is considered to be environmentally superior to the Proposed Project because it avoids all environmental impacts over the near-term. However, this alternative does not meet a majority of the project objectives, including fulfilling the existing land use plan goals of providing residential development on this site.

4.3 No Project/Existing Plan Alternative

4.3.1 No Project/Existing Plan Alternative Description

The No Project/Existing Plan Alternative addresses a "No Project" alternative whereby the circumstance under which the project does not proceed is assessed, taking into account what would be reasonably expected to occur in the foreseeable future by others (e.g., in accordance with the General Plan and Subregional Plan). This analysis is in accordance with Section 15126.6(e) of the State CEQA Guidelines, as discussed in Subchapter 4.2.

The project site has an existing General Plan land use designation of Residential-1 and an existing zoning designation of A70(8) and RR1. Based upon analysis of the current General Plan and zoning designations, it is estimated that up to 60 dwelling units would be allowable pursuant to current land use regulations. (Refer to Table 4.3-1 for the land use and zoning calculations.) The existing zoning would

permit approximately 5 dwelling units on the northern 42.5 acres of the site zoned A70, with the remaining 55 units located on the southern 83.6 acres within the RR1 zone. Similar to the Proposed Project, this Alternative would likely include the preservation of approximately 14 acres in a Biological Open Space Easement in order to preserve the Diegan Coastal Sage Scrub and retain a buffer between the proposed residential development and Lake San Marcos. (Refer to Figure 4.3-1 for the No Project/ Existing Plan Alternative.)

As this Alternative results in a residential development consisting of a little more than 50 percent of the number of units anticipated with Proposed Project, this Alternative is also considered a "reduced" development alternative.

4.3.2 Comparison of the Effects of the No Project/Existing Plan Alternative to the Proposed Project

Under the No Project/Existing Plan Alternative, a General Plan Amendment and Rezone would not be necessary. These discretionary actions needed for the Proposed Project were not considered to be significant land use impacts due to the Proposed Project's consistency with the applicable land use goals and policies of the General Plan, Subregional Plan and the City of San Marcos Neighborhood Plan. In addition, the Proposed Project was determined to be compatible with the community character surrounding the project site. Similar to the Proposed Project, the No Project/Existing Plan Alternative would realize the development potential of the site, based upon the planned residential land uses envisioned in the North County Metropolitan Subregional Plan, but at a significantly reduced density.

As noted previously, the Proposed Project would result in potentially significant impacts to water quality due to the proximity of the site to Lake San Marcos and San Marcos Creek, and the moderately and steeply sloped site that may generate erosion and sedimentation impacts to receiving waters. While the No Project/Existing Plan Alternative would construct approximately 57 percent as many residential dwelling units, the disturbance would occur over a greater area, requiring extension of infrastructure (e.g., roads and utilities), thus resulting in similar or greater erosion and water quality impacts. Grading for this alternative would cover approximately 46.7 acres (343,000 cy balanced cut and fill), disturbing approximately 10.5 more acres than the Proposed Project and increasing the potential for short-term erosion during construction and long-term erosion impacts with increased impervious surfaces and site disturbance (landscaping/irrigation). Similarly, water quality impacts to downstream water bodies (i.e., Lake San Marcos, San Marcos Creek and Batiquitos Lagoon) would likely increase due to the increased surface disturbance on site. It is anticipated that these impacts would be reduced to below a level of significance as would the Proposed Project's; however, this alternative would not avoid or substantially reduce the project-generated impacts.

The No Project/Existing Plan Alternative would reduce the expected 0.3-acre impact to Diegan Coastal Sage Scrub, an impact deemed significant but mitigated for the Proposed Project. Development of only 5 dwelling units on the northern portion of the site and 55 units on the south end, would avoid encroachment into the large canyon located in the northeast quadrant of the site.

An expanded area of development into the southern portion of the site is expected to require additional blasting due to the Santiago Peak Volcanic formation found throughout the project site. While additional blasting is anticipated, blasting activities would be located further from existing residences, reducing the short-term noise impacts. Short-term construction noise impacts associated with this alternative may therefore be reduced from the Proposed Project's.

No significant aesthetic impacts were identified for the Proposed Project since the development is proposed to be limited to the northern half of the project site, retaining approximately 76 acres of existing avocado orchards to the east and south which would screen the development from off-site public vantage points. This alternative would result in removal of a substantial number of avocado trees on the southern half of the site, which may increase the site's visibility from distant public vantage points, such as from Rancho Santa Fe Road, south of Questhaven Road. This alternative would retain approximately 66 acres of avocado orchards, however, the orchard would be split into two distinct areas in the southwest and northeast corners of the site. It is therefore expected that this alternative may have greater visual impacts to public views. This alternative is expected to have greater site-wide impacts to landform alteration since a majority of the land in the southern portion of the site consists of slopes between 25 to 50 percent. This alternative would impact approximately 15.8 acres of land with slopes exceeding 25 percent, as opposed to the Proposed Project impacts to 3.4 acres of land exceeding 25 percent or greater slope. While this alternative may avoid the need for the significant fill slope in the large canyon, the need for cut or fill slopes exceeding 15 feet is expected due to the steep slopes and varied topography on site.

As noted in Section 6.1.3, the Proposed Project would not result in significant traffic or circulation impacts. Since development under the existing General Plan and Zoning would result in substantially fewer vehicle trips (540 ADT versus the Proposed Project's 1,260 ADT), traffic impacts under this alternative would also be less than significant. The August 7, 2000 traffic study (Appendix J) provides a detailed analysis comparing the roadway and intersection volumes of the Proposed Project against the traffic volumes projected under the existing General Plan and Zoning.

No significant cumulative impacts were identified for the Proposed Project and no significant cumulative impacts are anticipated with the No Project/Existing Plan Alternative.

4.3.3 Rationale for Rejection of the No Project/Existing Plan Alternative

The No Project/Existing Plan Alternative, also considered to be a "reduced" project alternative, would not meet three of the four basic project objectives (objectives 2, 3 and 4 on page 4-1) that propose inclusion of on-site recreational facilities (this would be infeasible due to the cost involved in extending infrastructure to the south end of the site) and retention of a majority of the site in open space with producing avocado orchards. Bifurcating the avocado orchard by the extension of the internal circulation system and residential development to the south would reduce the producing grove acreage and effectively reduce the farming viability of the site. It is unlikely that the small amount of remaining avocado orchard in the northeast corner of the site (refer to Figure 4.3-1) would continue to be farmed commercially. This alternative is expected to increase erosion, water quality and landform alteration impacts by distributing the development across the length of the site and into the southern portion where a majority of the slopes exceed 25 percent. This alternative would result in greater visual impacts than the Proposed Project by developing in the southern, more exposed portion of the site, impacting more slopes greater than 25 percent, and eliminating more of the avocado orchards in the south that act as a visual buffer and screening. This alternative would result in similar and slightly greater environmental impacts for some issues, and would meet only one of the basic project objectives. Although this alternative is expected to reduce biological resource and short-term blasting noise impacts, these impacts were mitigated to below a level of significance for the Proposed Project and the reduction in impacts from this alternative are not substantial.

This alternative is rejected because it does not meet a majority of the basic project objectives, results in greater impacts for some environmental issues, and does not result in a substantial reduction in Proposed Project impacts.

4.4 Low Density Alternative

4.4.1 Low Density Alternative Description

During the NOP public comment period (May 25, 2000 through June 23, 2000), a commenter suggested that the EIR include evaluation of a "Low-Density Alternative." For purposes of this alternatives analysis, an 80-unit residential development is considered whereby the residential units would be constructed within the same general development footprint of the Proposed Project, but at a reduced density. Thus, this alternative would be reduce the overall site density of the development from 0.83 dwelling units per acre to approximately 0.63 dwelling units per acre. Within the 36.2-acre development area, the reduced density would result in a moderate increase in the amount of undeveloped/open space area. Under this scenario, the Low Density Alternative would require a General Plan Amendment (from Residential-1 to Residential-2) and a change in zoning from A70 and RR1 to RR2, as does the Proposed Project. Approximately 14 acres would likely be reserved in a Biological Open Space Easement, as with the Proposed Project.

Development under the existing General Plan and Zoning (addressed in Subchapter 4.3 above) also addresses a lower density development (60 units); however, the units would be sited according to the existing General Plan and zoning designations whereby a majority of the units would be located in the southern portion of the project site. In addition, an 80-unit alternative whereby the dwelling units would be evenly distributed across 112 acres (126-acre site, less the 14-acre Biological Open Space Easement) was considered, however, that development scenario would increase environmental impacts (e.g., visual, landform alteration, water quality, erosion/sedimentation) and therefore is not analyzed as an alternative.

4.4.2 Comparison of the Effects of the Low Density Alternative to the Proposed Project

A Low Density Alternative would reduce the density on site from 0.83 dwelling units per acre to approximately 0.63 units per acre. However, as noted in Section 6.1.1, the Proposed Project would be developed at a reduced density from that which currently exists in the neighboring residential community to the north and northeast (Lake San Marcos Community), which has an average density of 8 units per acre. As with the Proposed Project, the Low Density Alternative would be compatible with the surrounding land uses and the community character of the adjacent residential neighborhoods.

The limits of grading, earthwork quantities and cut and fill activities are expected to be similar to the Proposed Project. In an effort to minimize both short- and long-term erosion and sedimentation impacts, the mitigation measures recommended in Section 2.1.4 are also recommended for this alternative. While the limits of grading under this alternative would be similar to the Proposed Project's, the amount of impervious surfaces would be reduced by the elimination of 25 dwelling units. The amount of open space and landscaping would increase under the Low Density Alternative, which would therefore reduce the quantity of storm water flow leaving the site. The Low Density Alternative would reduce runoff volumes from those anticipated for the Proposed Project; however, the volumes projected for the Proposed Project were not anticipated to result in significant hydrology or flooding impacts. Relative to water quality impacts, the Proposed Project was anticipated to result in potentially significant long-term water quality impacts; however, short-term impacts were determined to be less than significant with implementation of design features, construction phase mitigation (Section 2.1.4) and permitting requirements. Thus, short-term water quality impacts would not be expected under the Low Density Alternative. Long-term water quality impacts may be reduced with this alternative, but are not expected to be avoided. Construction of 80 dwelling units and the supporting circulation system would result in long-term generation of urban pollutants and contaminants. The transport of urban contaminants from the site to downstream receiving waters (i.e., Lake San Marcos, San Marcos Creek and Batiquitos Lagoon) could result in significant but

mitigable water quality impacts. The mitigation measures recommended in Section 2.2.4 for the Proposed Project, would also be recommended for this alternative. This alternative would not avoid or substantially reduce a significant water quality impact.

Similar to the Proposed Project, minimal impacts to biological resources are anticipated, as the approximate 14-acre Biological Open Space Easement would be included with the Low Density Alternative. A detention basin would be proposed for the 80-unit Low Density Alternative, and would be located in the same general location as the basin identified for the Proposed Project in Figure 1.1-3. As such, the Low Density Alternative would result in a limited 0.3-acre impact to disturbed coastal sage scrub; this impact would be mitigated, however, due to the preservation of 14 acres of coastal sage scrub on-site in a Biological Open Space Easement. All of the indirect impacts discussed in Subchapter 2.3 Biological Resources, would be anticipated with the Low Density Alternative and the same mitigation measures would be recommended to reduce impacts to below a level of significance. This alternative would not substantially reduce biological resource impacts.

The Proposed Project was anticipated to result in significant short-term construction noise impacts due to the need for drilling and blasting of Jurassic Santiago Peak Volcanics. The Low Density Alternative would encompass the same construction zone (limits of grading) and would therefore require a similar level of drilling and blasting in order to prepare the site for the 80 dwelling units and circulation system. With the additional open space afforded with this alternative, however, some of the volcanic rock may be avoided through site design modifications. While the extent of blasting may be slightly reduced with this alternative, the mitigation measure recommended to reduce short-term noise impacts from Proposed Project construction (Section 2.4.4), would also be recommended for this alternative. This alternative would not substantially reduce or avoid a significant noise impact of the Proposed Project.

No significant aesthetic or community character impacts were anticipated with the Proposed Project and no aesthetic or community character impact would be expected with the Low Density Alternative. In addition, the Low Density Alternative would result in similar landform modification impacts anticipated with the Proposed Project. Like the Proposed Project, this alternative would be located in the northern half of the project site, adjacent to existing residential uses to the north. Approximately 76 acres of avocado orchards would be retained in the southern half of the site, screening the residences from distant southerly views (e.g. from Rancho Santa Fe Road). Although the Low Density Alternative homes would be screened from distant views, the grading and location of the detention basin would require a significant fill slope within the northeast canyon, as with the Proposed Project, which results in a significant landform modification impact. This impact can, however, be reduced to below a level of significance by implementation of mitigation recommended in Section 2.5.4.

No significant cumulative impacts were identified for the Proposed Project and no significant cumulative impacts are anticipated with the Low Density Alternative.

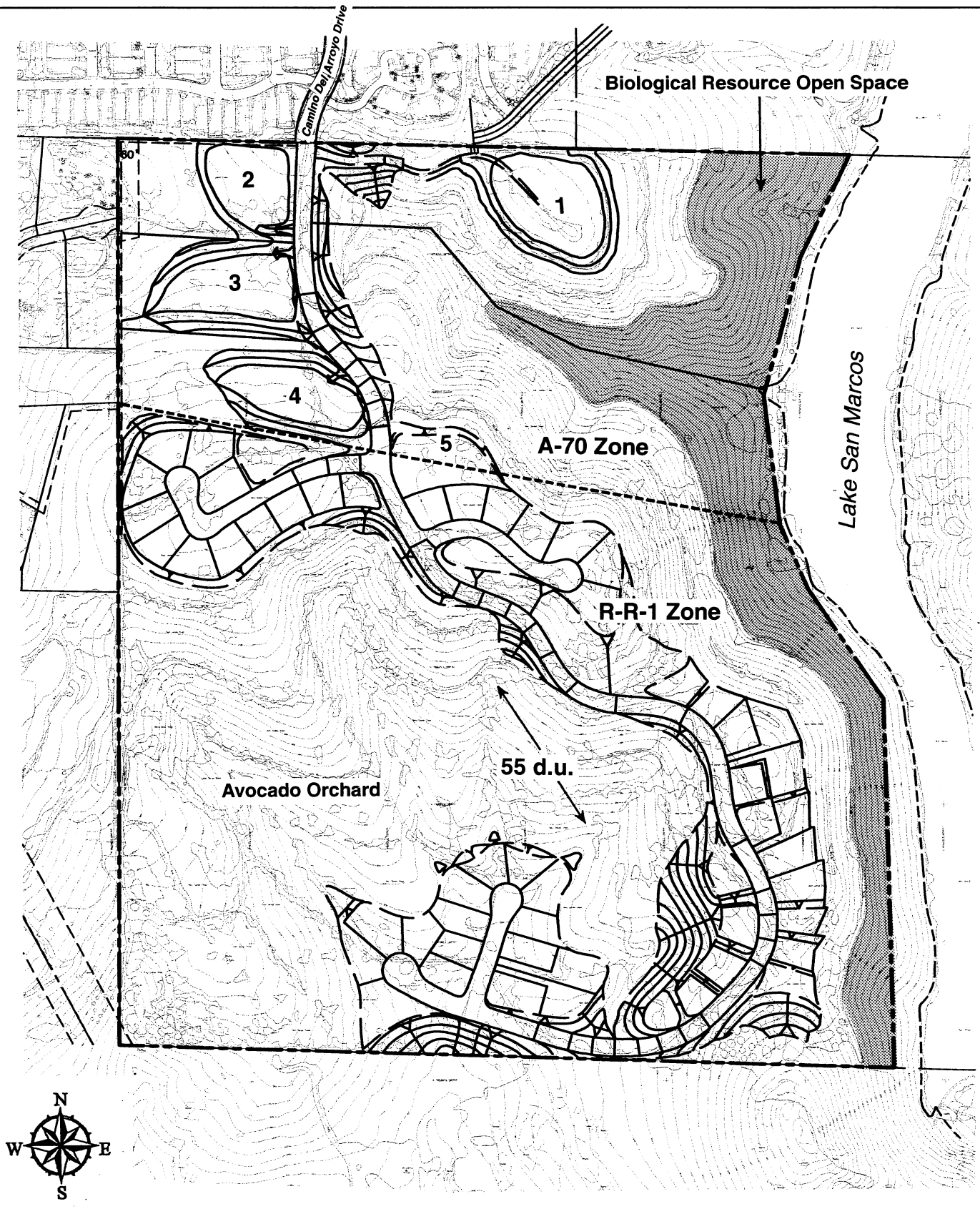
4.4.3 Rationale for Rejection of the Low Density Alternative

The Low Density Alternative would meet all of the basic project objectives; however, this alternative is not expected to substantially reduce or avoid any of the environmental effects of the Proposed Project. This alternative would require the same mitigation measures recommended for the Proposed Project for the issues of erosion/sedimentation, water quality, biological resources, short-term noise and landform modification. According to CEQA Guidelines § 15126.6(a), alternatives should attain most of the basic objectives of the project but avoid or substantially lessen the significant effects of the project. The Low Density Alternative does not avoid or substantially lessen the significant environmental effects of the Proposed Project, and therefore, this alternative is rejected.

There is no clearly superior alternative other than the No Project/No Development Alternative because the remaining alternatives have some advantages and some disadvantages. The No Project/Existing Plan Alternative reduces impacts to biological resources (0.3 acre of coastal sage scrub) and short-term construction noise impacts. However, this alternative would not meet three of the four project objectives, reduces the farming viability of the remaining orchards, increases erosion and water quality impacts and results in greater visual impacts. The Low Density Alternative meets all of the project objectives yet does not avoid or substantially reduce any of the project impacts. Thus, there is no alternative which has been determined to be environmentally superior to the No Project/No Development Alternative.

Table 4.3-1
RESIDENTIAL UNIT DENSITY ANALYSIS

	Slope %	Acres	Density Factor (units/acres)	Units
GENERAL PLAN				
Existing: (1) Residential	0-15	26.7	1.0	27
	16-25	31.2	0.5	16
	+ 25	68.2	0.25	17
		126.1		60
Proposed: (2) Residential	N/A	126.1	1.0	126
ZONING				
Existing: A70	N/A	42.5	0.125	5
RR1	N/A	83.6	1.0	83
		126.1		88
Proposed: RS1	N/A	126.1	1.0	126



Source: Hunsaker & Associates, August 2001

No Project/Existing Plan Alternative

LAKE SAN MARCOS ESTATES

Figure 4.3-1

HELIX

CHAPTER 5.0 – LONG-TERM ENVIRONMENTAL EFFECTS

5.1 Growth Inducing Impacts

In accordance with Section 15126.2(d) of the CEQA Guidelines, the growth-inducing analysis must address two key issues. The first is the potential for the project to foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The second issue is the potential for the project to encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Typically, this issue involves the potential for the project to induce further growth by the expansion or extension of existing services, utilities, or infrastructure. By definition, the CEQA Guidelines state that "[i]t must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment" (Section 15126.2(d)).

As described in detail in Chapter 1.0, the Proposed Project involves the development of a residential project, including a recreational area, on approximately 36 acres and retention of approximately 90 acres in open space easements for agriculture and native Diegan coastal sage scrub habitat adjacent to existing and planned rural and suburban development. Although a General Plan Amendment and Rezone are being requested, the proposed land uses are consistent with the policies and goals within the County General Plan and the North Metropolitan Subregional Plan as the County General Plan contemplates the shift from FUDA to CUDA. The project would be fulfilling the intent of the North County Metropolitan Subregional Plan by accommodating urban development within the CUDA while at the same time recognizing avocational agriculture by retaining 76 acres of avocado orchards. San Diego County is experiencing a shortage of all types of housing within San Diego County (SANDAG, January 1, 2000). The Proposed Project would be accommodating an existing population and housing demand rather than providing a surplus and inviting more growth. Further, the Proposed Project would not have a significant effect on the regional population given the relatively small size of the project (105 dwelling units on 36 out of 126 acres). With regard to the potential of the Proposed Project to foster economic or population growth, or the construction of additional housing in the surrounding area, this project would not cause a significant growth-inducing impact.

With respect to the second criteria for growth inducement, the Proposed Project would not extend or expand services, utilities, or infrastructure beyond those already planned for by the General and Subregional Plans. This project is an in-fill development and would not induce additional growth in this area; the project site is substantially surrounded by existing residential development to the north, west and south and by Lake San Marcos to the east. Public utilities currently extend to the project site boundary. The utilities required to service the project, including roads, sewers and water, would serve only the project site and would not induce growth beyond the project limits. The utilities extended to serve the project would be sized only to accommodate the Proposed Project. The provision of sewer service to the project site by the Vallecitos Water District (VWD) is consistent with the VWD Master Plan. As with sewer services, water supply to the site would be the responsibility of the project applicant by payment of fees to the VWD for additional facilities such as the proposed pump station and 8- and 10-inch water lines needed to serve the site. Utilities required for this project extend only into the northern portion of the project site which is adjacent to the existing urban development. The remaining 90 acres of the site is proposed to remain in its existing natural and agricultural state. With regard to the second criterion, the Proposed Project is not growth-inducing but rather growth-accommodating.

5.2 Significant Irreversible Environmental Changes Resultant from Project Implementation

5.2.1 Significant Irreversible Environmental Changes Which Would Be Involved in the Proposed Action Should It Be Implemented

The Proposed Project would result in significant, irreversible impacts to biologically sensitive lands. Under the Proposed Project, approximately 36.2 acres of the project site would be impacted by grading. As described in Subchapter 2.3, grading would directly impact approximately 0.3 acre of Diegan coastal sage scrub. Direct impacts to Diegan coastal sage scrub are considered significant and would require mitigation (Section 2.3.4). While impacts to these resources would be mitigated, the Proposed Project would effectively change the character of the site by removing these resources and replacing them with urban development (i.e., desilting basin). Beyond the 0.3-acre impact to sensitive lands (habitat), there would be no significant impacts to sensitive animal or plant species as a result of the Proposed Project.

5.2.2 Irretrievable Commitments of Non-Renewable Resources

This section summarizes the non-renewable resources, such as natural resources and energy supplies, that would be committed to uses that future generations would probably be unable to reverse. As described in Section 5.2.1, the Proposed Project would result in significant environmental changes to some natural resources (biological resources) on the project site. Additional natural resources (i.e., lumber and forest products, sand and gravel, asphalt, petrochemicals, and other construction materials) would be utilized in the construction of the project. Fossil fuels would be used in the construction phase of the project, and would also be required to serve the project over the long-term. These incremental commitments of non-renewable resources are neither unusual nor unexpected and must be weighed against the benefits of the Proposed Project. The primary benefit of the Proposed Project would be to provide residential opportunities to serve the North Metropolitan Subregion of the County. Proposed Project's use of non-renewable resources, as described above, is not excessive or significant given the relatively small scale of this development project.

CHAPTER 6.0 – ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

6.1 Effects Found Not to be Significant as Part of the EIR Process

6.1.1 Land Use and Planning/Community Character

An extended land use and planning/community character analysis was prepared and is included in Appendix H of this EIR. The extended analysis is the basis for the conclusions summarized below.

Land Use Plan Conformance

The Proposed Project includes a General Plan Amendment (GPA) for regional and site-specific land use designations, as well as a Rezone to accompany the requested GPA. In order to determine if the GPA results in a significant land use impact, it is relevant to compare the proposed land uses with the overlying planning policies for the subject property. The applicable land use plans and policies regulating development of the project site were obtained from the County of San Diego General Plan, the North County Metropolitan Subregional Plan, and the City of San Marcos General Plan. The plans and policies guiding the development of the project site are listed in detail in Appendix H and Table 1 of Appendix H. A significant land use plan or policy impact is anticipated if the Proposed Project conflicts with the County of San Diego General Plan elements, the North County Metropolitan Subregion Plan, or any other adopted plans or policies that govern development on the project site.

The Proposed Project was evaluated against each of the County objectives, goals and policies listed in Appendix H to determine if the project would be consistent with the regulating planning documents. As shown in Table 1 of Appendix H, the Proposed Project would be consistent with all of the applicable objectives, plans and policies within the County General Plan and the North County Metropolitan Subregional Plan. No significant land use impacts were identified.

As noted in the extended land use analysis (Appendix H), the Proposed Project is located within the City of San Marcos sphere of influence. Policy #1 in the Land Use Element of the North County Metropolitan Subregional Plan requires the County to cooperate in planning and regulating growth of unincorporated territory within each city's sphere of influence and take each city's planning objectives into consideration. The Proposed Project is consistent with the land use goals and policies of the Lake San Marcos Neighborhood Plan, as discussed in Appendix H.

During the Notice of Preparation (NOP) period for this EIR, the City of San Marcos submitted a letter regarding the scope of environmental issues. The letter (found in Appendix A to the EIR) includes a request that the EIR provide discussion regarding the "appropriateness of the subject project for annexation to the City of San Marcos" and that a mitigation measure be included that at a minimum requires the Project Applicant to execute an Irrevocable Offer to Annex (IOA) to the City of San Marcos. As noted in Table 1 of the extended land use analysis (Appendix H) on page H-13, the County of San Diego General Plan Land Use Policy 1.2A states "For lands designated Future Urban Development Areas with annexation potential, the County will cooperate with adjacent cities and assist such areas in obtaining municipal status. Until annexation occurs, a parcel size of ten acres shall be required when considering divisions of land. If after a minimum of five years of the effective application of the FUDA category no annexation proceedings have been initiated, or the adjacent city has not agreed to annexation, the property owner may request a plan amendment to re-evaluate the appropriateness of the Future Urban Development Category." The "Project Compliance" column in Table 1 (page H-13) states that "There are no records of any annexation proceedings having been initiated for the subject property between January 3, 1979 (the effective date of the current FUDA designation) and January 3, 1984 (five years later). Therefore, as no annexation proceedings were initiated by the adjacent City of San Marcos for the subject parcel, within five years of the effective application of the FUDA category, the project applicant's request for a General Plan Amendment is consistent with Policy 1.2A. In addition, General Plan Policy 1.2A would not be applicable to the subject parcel under the proposed General Plan land use designation of CUDA. While the Project Applicant is proposing to annex into certain facilities improvement districts (e.g., sewer~~/water~~ improvement districts and community facilities district for fire service), as noted in

the matrix of project approvals and permits in Section 1.3.1, the Project Applicant is not proposing to annex into the City of San Marcos municipal boundaries as part of this development application.

No significant plan conformance impacts were identified.

Environmental Plans and Policies

A significant land use impact is also anticipated if the Proposed Project conflicts with adopted environmental plans of the community, including the State of California Natural Community Conservation Planning (NCCP) Process Guidelines (including the draft plans for the County of San Diego's North County Multiple Species Conservation Program and City of San Marcos' Multiple Habitat Conservation Program). In terms of NCCP regional conservation programs, the property is within the County of San Diego's North County MSCP planning area. The North County MSCP is currently being prepared and has not been adopted as of this date. The City of San Marcos' MHCP planning area is located immediately adjacent to the County island in which the project site is located. The City's MHCP has also not yet been adopted; however, a "hard line" preserve boundary has been mapped to the south and east of the project site. Thus, the City's MHCP was reviewed for project conformance with guidelines protecting coastal sage scrub and the federally threatened coastal California gnatcatcher. Following the NCCP Guidelines (1993) for habitat evaluation, the coastal sage scrub present is of low potential value for long-term conservation. Refer to Subchapter 2.3 for further discussion relative to NCCP guidelines and determination of habitat value.

Community Character

In addition to land use plans and policies and environmental plans, each community/subregional planning area within San Diego County has community character attributes common to the area as outlined in the applicable planning document. Determination of significant effects to community character is derived from evaluating and comparing the introduced development to the existing community character of the area. If the proposed land use conflicts with the nature and character of the existing setting of the community, a significant impact is anticipated. The North County Metropolitan Subregional Plan and the City of San Marcos' Lake San Marcos Neighborhood Plan were used to determine if a significant land use compatibility impact is anticipated. (The City's Neighborhood Plan was reviewed in accordance with County policy to consider the City's planning objectives, as discussed previously.)

The project site is located within an unincorporated County island that is surrounded by the cities of San Marcos and Carlsbad. The City of San Marcos surrounds a majority of the island, with Carlsbad bounding a small segment of the island to the west. Since the project site is located south and east of two major thoroughfares, San Marcos Boulevard and Rancho Santa Fe Road, the focus of the community character analysis is on the types of land uses located south and east of these two arterials.

The area surrounding most of the project site and within the County island is the Lake San Marcos community, which consists primarily of approximately 2,400 single- and multi-family residences built in the 1970s and 1980s and surrounds the northern perimeter of Lake San Marcos. In addition to the recreational activities afforded by the lake, amenities within the community include an 18-hole golf course, clubhouses and tennis courts. Commercial and retail services supporting the community are located primarily along Rancho Santa Fe Road and San Marcos Boulevard. The community character closest to these two thoroughfares is more urban in nature, with the residential component of the community both suburban and rural residential in nature. The residential communities within the City of San Marcos, east of the County island, are also considered to be a mix of suburban and rural residential developments, with these communities extending south and into the foothills of the Double Peak mountain range. Pockets of large-lot estates are found on the east side of the lake and south and east of the project site, within both the County island and the City of San Marcos. The project site is situated on the southern periphery of the developed Lake San Marcos Community.

The land uses within both the County island and the City of San Marcos, in the project vicinity, are set at the base of and continue into the foothills of the Double Peak range. These foothills and range lend a rural

character to this area as the steep slopes associated with the higher elevations of this range do not permit development. Most of the residences within these residential communities have views of the foothills and range, a key element of the community character. Lake San Marcos is a long narrow lake that is surrounded by the existing residential community on the northern two-thirds and moderate to steep sloped open space on the southern one-third. The lake narrows into a canyon as the lake trends south, with the steepest slopes found on the east side of the lake. The moderate- and steep-slopes on the west side of the lake climb toward the project site for the length of the southern one-third of the lake.

The land use character to the south and west is considered primarily rural residential, with a fair amount of undeveloped open space located to the south. This area is generally comprised of steep to moderate slopes, patches of native vegetation and agriculture (primarily avocado or citrus groves), rock outcrops and drainages trending toward San Marcos Creek. Phase I of a 2,000-acre (3,400 dwelling units) residential development (San Elijo Ranch) is being constructed to the southeast of the project site; grading activities for the San Elijo Ranch development are visible from the project site. Buildout of the San Elijo Ranch Project is anticipated to continue the residential, suburban character of the City of San Marcos further to the south.

While the land use setting and community character surrounding the project site is composed primarily of suburban and rural residential uses, a small light industrial park is located further to the south in a small canyon along La Costa Meadows and Diamond Street. The light industrial park is, however, tucked into this canyon and not readily visible from the project site due to intervening topography. In addition, the primary access streets to the project site and the industrial park are over 1.5 miles apart. The industrial park land uses are not considered indicative of the community character surrounding the project site, due to the topographical and access separation between these two land uses.

In accordance with the community character threshold of significance, the North Metropolitan Subregional Plan (County of San Diego) and the Lake San Marcos Neighborhood Plan (City of San Marcos) were evaluated for applicable land use goals and policies. The Proposed Project consists of a low-density residential project, located adjacent to existing residential uses within the Lake San Marcos community. The proposed uses are an extension of the existing residential uses that currently surround the northern two-thirds of the lake. Approximately 90 acres of the site is proposed to be retained in its existing agricultural or natural state. The introduction of 105 new homes on the 126-acre project site would not change the community character which is described as having both a rural and suburban residential character.

The Proposed Project accommodates urban development within the designated Current Urban Development Area (CUDA). The northern portion of the project site, where the vast majority of development is proposed, is already designated CUDA. Although the regional land use designation is proposed to change from FUDA to CUDA, the southern portion of the project site (approximately 60 percent of the total site acreage) is proposed to be retained in an agricultural open space easement allowing active avocado farming consistent with the goal of recognizing avocational agriculture. As discussed previously, the Proposed Project meets the planning policies within the Lake San Marcos Neighborhood Plan and therefore is compatible with the community character envisioned for this lakeside community. No significant community character impacts are anticipated. The Proposed Project would not result in significant land use planning or community character impacts, as summarized above and discussed in detail in Appendix H.

6.1.2 Air Resources

A detailed air quality technical analysis was prepared for the Proposed Project to determine if the project would result in significant short-term construction phase impacts to air quality, as well as long-term air quality impacts associated with vehicle trips generated by the project. The *Lake San Marcos Estates Air Quality Impact Analysis* prepared by Giroux & Associates, dated March 6, 2001, is found in its entirety in Appendix I of the EIR. In summary, the technical analysis concludes that there would be no significant air quality impacts associated with project implementation.

With regard to construction emissions, the analysis assumed that enhanced dust control measures, listed in the Chapter 1.0 Project Description grading and construction phase description, would be implemented. Under that assumption, the analysis concludes that fugitive dust (PM_{10}) emissions could be reduced to below a level of significance. The calculated daily PM_{10} emissions, assuming a maximum of 13 acres of disturbance on any given day (worst-case assumption) and aggressive dust control measures are implemented (as proposed in Chapter 1.0 Project Description), is projected to be approximately 133 lbs/day, as shown in Appendix I. When combined with other construction emissions, the total PM_{10} emissions are projected to be 147 lbs/day (Section 5.A.3 of Appendix I). Utilizing the South Coast Air Quality Management District (SCAQMD) threshold of 150 lbs/day for PM_{10} emissions, the Proposed Project would not exceed this threshold. The 150 lb/day threshold is the level that the SCAQMD has determined to not "substantially increase" an existing violation of PM-10 standards in the South Coast air Basin. (In the absence of adopted standards in the San Diego Air Basin, it is County policy to use the South Coast CEQA threshold as a conservative surrogate, even though San Diego County air quality is not as bad as in the Los Angeles Basin.) Soil dust is usually chemically benign, and very little dust generated by mechanical abrasion is within the ultra-small diameter (2.5 microns or less) range capable of entering the deepest lung tissue. The most dominant portion of such dust is within the very large diameter range that remains suspended in the air for only a few seconds. Such large particles rapidly settle out on horizontal surfaces such as parked cars, outdoor furniture, landscaping foliage etc. The deposition distance is generally less than 100 feet. The closest homes north of the project site may temporarily experience dust soiling nuisance from grading in close proximity to these homes. Prevailing winds from the west and northwest, however, would tend to minimize dust nuisance at the limited number of homes near the northern project boundary within the potential dust deposition zone. (Prevailing wind assumptions are from the Miramar air station 1995 windrose data, Appendix I.) Soiling nuisance during grading is therefore confined to the project itself and is not considered significant. Air quality impacts from project grading operations were determined to be less than significant.

Diesel exhaust particulates have been added to the California list of carcinogenic materials by the Scientific Review Panel under AB-1807 (Tanner). This designation requires that levels of diesel exhaust particulates must be reduced within a reasonable timeframe with the application of best available control technology. Over the construction lifetime of Lake San Marcos Estates, on-site construction equipment will generate 786 pounds of potentially harmful particulate matter. An additional 32 pounds will be generated by on-road trucks (Appendix I). Thus, in order to determine if carcinogenic emissions from grading equipment pose any excess cancer risk to the general public, a screening level computer dispersion model (SCREEN3) was used to convert the on-site diesel particulates to an ambient concentration. This concentration was, in turn, combined with the adopted unit risk factor for diesel exhaust inhalation to determine an upper bound on health risk. An excess cancer risk of ten in one million is considered a possible level of concern (SDAPCD public notification guideline level). A risk of less than one in a million is considered a *de minimis* risk. There is no "safe" exposure level for the carcinogenic components of diesel exhaust. The adopted threshold is one of "prudent risk" whereby the individual cancer risk is not increased by more than one in one hundred thousand. An individual risk of one in one 100,000 is the level at which emitters of toxic air contaminants must warn the surrounding population of a cancer risk under Proposition 65. The same level of concern from exposure risk at gas stations, dry cleaners or factories was presumed to be applicable to mobile source diesel exhaust. The analysis in Appendix I concludes that equipment exhaust emissions will be well below thresholds of significance and that public health risk from heavy equipment diesel exhaust particulates will be below *de minimis* criteria.

Relative to long-term operational impacts, the study concludes that vehicular exhaust from site-related traffic will not exceed thresholds of significance with a large margin of safety. A threshold of 55 pounds per day for ROG and NO_x is applied for this project. This threshold from the SCAQMD is a level of emissions that would not substantially worsen an existing violation of ozone standards. The 55 pounds per day comes from the Clean Air Act which establishes 10 tons/year as the de minimus threshold for extreme non-attainment areas. Although San Diego is only a moderate non-attainment area, County staff recommends use of the "extreme" threshold as an added measure of safety for ozone protection. The project will generate 1,260 daily vehicle trips, or 720 more than the level that would result from buildout under the existing general plan and zoning. Regional exhaust emissions from daily vehicle travel was calculated using the California ARB URBEMIS7G (URBan EMISsions using EMFAC7G) computer model. The model results are shown in Table 5.2 of Appendix I. The project-related emissions under existing general plan/zoning conditions and under the emissions generated by the Proposed

Project (with a GPA/Rezone), are well below the adopted significance threshold. The project will not substantially increase regional vehicular emissions.

In addition, the traffic generated from the proposed project would not result in microscale air quality impacts, or "hot spots." Microscale CO levels at 10 feet (3 meters) were calculated for combined plus project traffic at three area intersections, including Rancho Santa Fe Road/Camino del Arroyo, Rancho Santa Fe Road/Lake San Marcos Drive, and Rancho Santa Fe Road/San Marcos Boulevard. Local one-hour CO exposures were added to the hourly background observed in 1998 in Oceanside (3.2 ppm). A "persistence factor" was used to convert the one-hour levels to an 8-hour exposure. The CO standard of 9.0 ppm for 8 hours is the threshold level at which persons with pre-existing heart conditions experience a slight increase in angina pectoris pain symptoms associated with the disease. The 8-hour standard was not exceeded at 3 meters by combined background plus project-related traffic. Microscale air quality impacts are less than significant, and no further analysis is necessary.

6.1.3 Transportation/Circulation

A technical traffic analysis was prepared by Darnell & Associates for the Proposed Project: *Traffic Study for Lake San Marcos Estates in the County of San Diego*, February 20, 2001. The traffic study concluded that the Proposed Project would not result in significant direct traffic impacts to area roadways and intersections. In addition, the proposed circulation system was determined to be adequate. The results of the study are summarized below, with an extended CEQA traffic analysis and the full technical study found in Appendix J of the EIR.

Under existing conditions, four roadway segments in the project study area currently operate at LOS E or F: (1) Rancho Santa Fe Road north of Lake San Marcos Drive; (2) Rancho Santa Fe Road north of Camino del Arroyo; (3) Rancho Santa Fe Road north of Melrose Drive; and (4) San Marcos Boulevard east of Rancho Santa Fe Road. All other roadway segments operate at LOS D or better under existing conditions. The segment of Rancho Santa Fe Road north of Melrose Drive presently operates at LOS F, however is planned to be improved by the City of San Marcos, with construction beginning in late Summer 2001 (T. Reginal, December 11, 2000). With the planned interim improvement to a four-lane Major Arterial, this segment will operate at LOS D. The four intersections analyzed in the project study area operate at LOS D or better, under existing conditions.

For the purposes of this project analysis, LOS D is considered an acceptable LOS at intersections and on roadway segments. (The City of San Marcos and County of San Diego encourage operation of LOS C or better at planned intersections and roadway segments. For developed areas, LOS D is an acceptable Level of Service at intersections and roadway segments [City of San Marcos Circulation Element Policy 2; San Diego County General Plan, Part XII Public Facility Element, page XII-4-15]). A significant traffic impact would occur if there is an increase in volume to capacity (v/c) ratio greater than 0.02 (on roadway segments) or an increase in delay of more than 2 seconds (at intersections) on roadway segments or intersections operating at LOS D, E or F with project traffic. It should be noted that these guidelines are consistent with the thresholds of significance developed by the City of San Diego and utilized by the County of San Diego for roadway segments operating at LOS E or F.

Based on daily and peak hour trip generation rates obtained from SANDAG, the Proposed Project would generate 1,260 average daily trips with 101 trips in the AM peak hour and 126 trips in the PM peak hour. The trip distribution percentages were based on several factors including existing travel patterns in the project vicinity, field observations made by Darnell & Associates, and travel times. The proximity of shopping and workplaces was also considered. Thus, using the trip distribution percentages, project-generated traffic volumes were assigned to the local roadway network and the daily AM/PM peak hour volumes were thus determined. Appendix J of the EIR includes the distribution percentages (Figure 3), project traffic AM/PM peak hour volumes (Figure 4) and volumes for existing plus project traffic (Figure 5).

To assess the impacts of project traffic on the surrounding street system, project generated trips were added to existing traffic. The analysis concluded that seven segments are projected to operate at LOS D, E or F with the

addition of project traffic. However, when the significance threshold of 0.02 v/c increase is applied, none of the roadway segments exceeds this threshold due to the addition of project traffic. The increases are equal to or less than the allowable two percent increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. Lake San Marcos Drive and Camino del Arroyo would continue to operate at LOS C or better under existing plus project conditions. Therefore, the addition of project traffic on local roadway segments would be less than significant.

Only one intersection, Rancho Santa Fe Road/San Marcos Boulevard, is projected to operate at LOS D, E or F with the addition of project traffic. However, the projected increase in delay at the intersection is 1.6 seconds and is less than the allowable two-second increase based on the significance criteria outlined in the *SANTEC/ITE Guidelines for TIS in the San Diego Region*. The three remaining local intersections analyzed would continue to operate at LOS C or better under existing plus project conditions. Therefore, impacts to local intersections would be less than significant. (The results of the roadway segment analysis and intersection analysis are presented in Tables 5 and 6 of the extended CEQA analysis in Appendix J.)

The criteria for which a project is subject to the regulations as set forth in the 1991 San Diego County Congestion Management Plan (CMP) are determined by the trip generation potential for the project. The ADT threshold currently used to determine if a project is subject to CMP regulations is 2,400 vehicle trips. As the Proposed Project would generate approximately 1,260 daily trips, an enhanced CEQA review of CMP roadway segments is not required.

The project intends to provide primary access from Camino del Arroyo that would connect the project to Rancho Santa Fe Road. Camino del Arroyo is classified as a residential collector that is designed to accommodate a LOS C volume of 4,500 ADTs or less. With the addition of project traffic, Camino del Arroyo would be carrying 2,688 ADTs. There is adequate capacity on Camino del Arroyo to accommodate the project traffic. Camino del Arroyo Drive transitions to Camino del Arroyo Way at the project boundary, where the road would provide the single ingress to and egress from Drives "A" through "E." When constructed to the County of San Diego's "Residential Street" specifications, this roadway would have adequate capacity to handle the project's daily volume of 1,260 trips. Therefore, no significant impacts to local circulation would occur.

The project consists of six private drives, Camino del Arroyo Way and Drives "A" through "E," that constitute the internal circulation system. The applicant is requesting a waiver to intersection spacing requirements between Drives "A" and "E," where an intersection spacing of approximately 145 feet between Drive "A" and "E" is proposed. The County standard is a 200-foot minimum spacing. Drive "A" serves approximately 10 residential units and Drive "F" supports approximately 15 residential units. Investigation of the proposed intersection spacing by Darnell & Associates (August 2000) indicates that there would be no turning movement conflicts between the intersections and that the proposed spacing would be adequate. Therefore, no significant impacts related to internal circulation would occur.

Prior to and during the NOP comment period, concerns were expressed about project traffic bypassing San Marcos Boulevard and traveling through the Lake San Marcos community via San Pablo Drive to Discovery Lane to reach the commercial district along San Marcos Boulevard and the college area. The motorists that would be expected to use this diversion route would be individuals traveling to and from the east on San Marcos Boulevard. Review of the travel times found that accessing San Marcos Boulevard via San Pablo Drive versus accessing San Marcos Boulevard via Rancho Santa Fe Road would not significantly improve drive time. Therefore, as a worst case condition, it is estimated that a nominal percentage (1 to 2 percent) of project traffic would access the San Marcos commercial district and college area via San Pablo Drive and Discovery Lane. The addition of one to two morning and afternoon peak hour trips (or 13 to 26 average daily trips) would not have a noticeable impact on traffic conditions along San Pablo Drive or Discovery Lane.

During preparation of the Mitigated Negative Declaration, discussed in Chapter 1.0, CALTRANS expressed concern about the project's impacts to the eastbound and westbound ramps at Rancho Santa Fe Road and SR-78. As discussed and illustrated in Appendix J, the Proposed Project adds only 9 AM peak hour southbound

trips, 22 AM peak hour northbound trips, 26 PM peak hour southbound trips, and 11 PM peak hour northbound trips to the segment of Rancho Santa Fe Road between San Marcos Boulevard and SR-78. Under the worst case scenario, the project would add a maximum of 31 AM peak hour trips (both directions) and 37 PM peak hour trips (both directions) to the Rancho Santa Fe Road/SR-78 interchange. This volume of traffic is less than the minimum requirement of 50 peak hour trips and, therefore, an analysis of the Rancho Santa Fe Road/SR-78 interchange is not required. In addition, due to the low volume of project trips at these ramps, the thresholds of significance for traffic impacts would not be exceeded and the project would not result in significant impacts at the freeway ramps.

As discussed in Chapter 1.0, construction vehicles would access the site from Camino del Arroyo Drive. Grading is anticipated to occur in one phase, whereby brushing, clearing and grading equipment/vehicles would remain on site until the grading phase is completed. The proposed grading is balanced, with no import or export of soil proposed and no associated haul trucks. Truck trips to and from the site during this phase would be minimal and intermittent. Construction vehicles used during the home construction phase would also access the site from Camino del Arroyo Drive. Homes would be constructed as individual residential units are sold. Construction traffic would be intermittent in nature and therefore would not result in any significant traffic delays on local roadways. Construction vehicle traffic impacts would be short-term and not significant.

6.1.4 Cultural Resources

A 1975 archaeology survey and report, prepared by R.L. Kaldenberg, was updated by Affinis in September 2000. The Affinis report, *Lake San Marcos Estates – Archaeology*, dated September 22, 2000, summarizes the results of their review of the 1975 report, an updated cultural resources records search and current field survey conducted using parallel transects spaced 20 meters apart. The report is included as Appendix K to this EIR, with confidential records and maps deposited with the County of San Diego DPLU. The report concludes that no historic or archaeological resources were identified on the project site during the past (1975) or current (2000) surveys and records searches. While no resources were identified on the project site and no significant impacts are expected, portions of the site are covered with heavy leaf duff in the avocado groves. It is recommended as a condition of project approval that an archaeologist field check the ridge tops within the limits of proposed grading, following brushing and clearing and prior to grading activities. Should resources be discovered during monitoring, a grading monitoring and data recovery program should be implemented. This condition of approval shall include, but shall not be limited to, the following actions:

- Prior to issuance of a grading permit, the applicant shall provide written verification to the Planning Director that a County-certified archaeologist has been retained to implement the monitoring program. This verification shall be presented in a letter from the Project Archaeologist to the Director of Planning and Land Use. All persons involved in the monitoring program shall be approved by the Planning Director prior to any pre-construction meeting.

- The County certified archaeologist shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.

- During the original cutting of previously undisturbed deposits, the archaeological monitor(s) shall be onsite full-time to perform periodic inspections of the excavations. The frequency of inspections will depend on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.

- In the event that previously unidentified cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow evaluation of potentially significant cultural resources. The archaeologist shall contact the County Archaeologist at the time of discovery. The archaeologist, in consultation with County Archaeologist, shall determine the significance of the discovered resources. The County Archaeologist must concur with the evaluation before construction activities will be allowed to resume in the affected area. Isolates and clearly non-significant deposits will be minimally documented in the field and the monitored grading can

proceed. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the County Archaeologist, then carried out using professional archaeological methods. If any human bones are discovered, the County Coroner shall be contacted. In the event that the remains are to be of Native American origin, the Most Likely Descendent, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.

- Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods, according to the Research Design and Data Recovery Program.

- All cultural material collected during the grading monitoring program shall be processed and curated according to current professional repository standards. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation.

- A report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the Director of Planning and Land Use prior to the issuance of any building permits. The report will include Department of Parks and Recreation Primary and Archaeological Site forms.

During the NOP comment period, the Native American Heritage Commission requested that their agency be contacted to conduct a Sacred Lands Check. Correspondence between Affinis and the NAHC is included in Appendix K; no sacred lands were identified within the project boundaries.

6.1.5 Fire Access and Safety

The proposed residential project would be serviced by the San Marcos Fire District. The closest station to the project site, Station #2, is located at 1250 South Rancho Santa Fe Road, approximately 0.5 mile to the north. Station #2 maintains a Type 1 (structure) engine and a Type 3 (brush) engine and has a staff of three. The estimated response time to the project site is five minutes, which is consistent with the average response time for the City and the District (J. Twymann, October 5, 2000).

According to the San Marcos Fire Department, the Proposed Project would not result in a significant increase in the risk of human-caused fires within the District. The Proposed Project's secondary emergency access, compliance with Fire Code requirements and annexation into the San Marcos Fire District would ensure that no significant fire access and safety impacts would result. In addition, the Proposed Project is considered to be consistent with the July 1995 "Wildland Fire Management Planning Model" as the San Marcos Fire District setback and sprinklering requirements are consistent with the criteria within the Model. The District has not currently adopted the 1995 Model; however, the District's Fire Code requirements are consistent with the criteria (J. Twymann, October 5, 2000). No significant fire access or safety impacts have been identified.

6.2 Effects Found Not to be Significant During Initial Study

6.2.1 Agricultural Resources

Within the 126.1-acre site, approximately 112 acres are currently being used for active agricultural purposes with avocado groves. The Proposed Project would require grading and improvements to approximately 36.2 acres, leaving approximately 76 acres in agricultural production. The Proposed Project includes the retention of 75.7 acres of avocado groves in a permanent open space easement dedicated to the County of San Diego. The remaining avocado groves would be maintained and harvested by a remotely located service company.

While agricultural activity has occurred on the project site since the late 1970s, the current zoning and the soils characteristics on site are not indicative of prime farmlands. The project site is currently zoned Residential (1)

which permits low-density residential and minor agricultural uses. In addition, since the project is retaining approximately 68 percent of the existing avocado groves (76 acres of the existing 112 acres), the loss of approximately 36 acres of avocado farming is not a significant impact. The retained avocado groves are proposed to be placed within an agricultural easement, dedicated to the County of San Diego.

The project site is not mapped by the County of San Diego with either prime, non-prime or grazable lands. The site is mapped as having Exchequer rock silt loam and Cieneba rocky coarse sandy loam on the U.S. Department of Agriculture Soil Survey of San Diego. The Exchequer soils found on site are primarily found within wildlife habitat and habitat watersheds, with shallow to very shallow, well-drained silt loams. Similarly, the Cieneba soils found on site consist of excessively drained, very shallow to shallow coarse sandy loams usually associated with avocado groves, range, wildlife habitat, recreational areas and watersheds. These soils are not considered prime farmland.

6.2.2 Population and Housing

The Proposed Project site is being farmed for avocados, with no existing housing located on site. No housing would be displaced as a result of the proposed residential project. The Proposed Project would accommodate population and provide housing that was anticipated when the Subregional Plan was adopted. The project is growth accommodating and not growth inducing. (Refer also to Subchapter 5.1.) The proposed residential project would provide additional housing in the County of San Diego where there is currently a housing shortage. No significant population or housing impacts are anticipated.

6.2.3 Geologic Issues (Seismicity, Unstable Soils, Unique Features, Minerals)

No soil or geologic conditions were encountered or identified on the project site which would result in significant impacts, provided that recommendations in the 1998 study entitled *Soil and Geologic Reconnaissance, Lake San Marcos Estates, San Marcos California* (GEOCON, Inc.) are implemented (Appendix B). The Proposed Project would not increase the risk of exposure of people or structures to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards.

The Proposed Project is not located in a hazard zone identified by the Alquist-Priolo Earthquake Fault Zoning Act, Special Publication 42, Revised 1994 entitled *Fault-Rupture Hazards Zones in California.* Like most of southern California, the project site is subject to ground shaking and seismic forces from regional active faults, however, no special setbacks or design parameters are necessary other than those required by the Uniform Building Code (Uniform Building Code 1997).

A site visit was performed by County of San Diego Geologist John Peterson on May 19, 1998. No features were identified in that field visit that would indicate the potential for landslides or liquifaction. The project site is underlain by metavolcanic rocks that are not subject to slope failure or liquifaction. In addition, the Soil Survey for San Diego (U.S. Department of Agriculture, December 1973) shows that no soils on site have a high shrink-swell behavior; soils on site were noted as having low to moderate shrink-swell behavior. Unstable soils conditions are not anticipated. Additionally, during the field survey, no significant geologic features were identified on the property. The Natural Resources Inventory of San Diego County (Conservation Element of the General Plan) does not indicate any unique geologic features on site or in the project vicinity.

The project site is not located in a significant mineral resource area, as identified on maps prepared by the Department of Conservation, Division of Mines and Geology (Update of Mineral Land Classification: Aggregate Materials in the Western San Diego Production-Consumption Region, 1996). The County Geologist did not encounter any evidence of past or present mining activities, nor the presence of sand, gravel or other mineral resources during his May 1998 field survey.

Refer to Subchapter 2.1 for the analysis of the potential for soil erosion impacts.

6.2.4 Odors

The Proposed Project consists of a residential development where there would be no potential sources of objectionable odors. No significant odor impacts are anticipated. (Short-term impacts associated with construction vehicle diesel emissions are addressed in Section 6.1.2.)

6.2.5 Traffic Safety, Pedestrian/Bicycle Safety and Parking

The Proposed Project would not significantly increase traffic volumes on area roadways or at area intersections, as discussed in Section 6.1.3. Thus, the proposed project would not result in a significant increase in the potential for traffic hazards. The project applicant is, however, requesting a waiver to intersection spacing requirements between Drives "A" and "F." The applicant proposed an intersection spacing of 145 feet between these two streets in place of the County standard of 200 feet. Drive "A" would serve 10 residential units and Drive "F" would serve 15 residential units. The traffic engineering consultant for the project, Darnell & Associates, investigated the proposed intersection spacing and concluded that there would be no turning movement conflicts between the intersections and that the proposed spacing would be adequate.

The proposed circulation system within the project site includes five-foot wide pedestrian sidewalks on both sides of the road for all drives within the residential development. Provision of pedestrian sidewalks will prevent an increased risk for pedestrian safety. Proposed sidewalks along Camino del Arroyo Way would connect to existing sidewalks north of the site along Camino del Arroyo Drive. The Proposed Project would not result in a change to the existing pedestrian amenities in adjacent neighborhoods and would not change the posted speed limits. No bicycle lanes are proposed for this project and no bicycle lanes exist in the adjacent residential neighborhoods. The average roadway width within the proposed development and adjacent neighborhoods is 40-feet; bicycle circulation within and around the neighborhood should not be prohibitive.

The proposed residential development includes the County standard of two parking spaces per residence. No significant parking impacts are anticipated.

6.2.6 Hazards

The Proposed Project would not result in a significant risk of accidental explosion or release of hazardous substances. The proposed residential project would not involve the storing or handling of sources of chemical or compounds that present a risk of explosion or release of hazardous substances. A Phase I Environmental Site Assessment was prepared by Law/Crandall, dated October 3, 1997. The Phase I assessment included a site survey, review of historic aerial photographs, and the appropriate records search of federal, state and local agencies managing and recording the storage and release of hazardous substances. The Phase I assessment concludes that the subject property was not identified in the environmental regulatory listings and no properties surrounding the project site present a risk to the future residents of the property. Field surveys found no obvious evidence to indicate significant environmental concern at the subject property from on- or off-site sources and no further study was recommended.

Refer to Section 6.1.5 for an analysis of potential impacts due to fire hazards and safety.

No significant flooding hazards are anticipated with the Proposed Project as the site lies outside mapped dam inundation areas for major dams and reservoirs within San Diego County. The project site is also located outside the 100-year floodplain for San Marcos Creek and Lake. Since the project lies outside potential floodways, the project complies with the applicable County Office of Disaster Preparedness. In addition, the Proposed Project complies with the Floodways and Floodplain Fringe section of the Resource Protection Ordinance (Article IV, Section 3).

6.2.7 Public Services and Utilities

The Proposed Project would not result in any significant impacts to school services. The addition of 105 residential dwelling units could generate additional school-age students which would attend schools within the San Marcos Unified School District. Potential students associated with the proposed project would attend the following schools within the District: La Costa Meadows Elementary School located approximately 6 miles from the site; San Marcos Middle School located approximately 5 miles from the project site; and San Marcos High School located approximately 1.5 miles from the site. The District has indicated that the project would contribute to existing overcrowding of schools. While no significant impacts are anticipated, potential adverse impacts to local schools would be minimized by the payment of school fees as a matter of law per Government Code Section 65995(b) (Senate Bill 50). Implementation of the Proposed Project will not result in a need for new school facilities.

Police services to the project site would be provided by the County Sheriff's Department. The Department has a substation within the City of San Marcos, located approximately five miles from the project site. The County Sheriff's Department has indicated availability to serve the project residents. Refer to section 6.1.5 for a discussion of fire services and emergency access to the project site. No new police service facilities would be constructed as a result of project implementation.

The proposed residential home sites range in size between 6,000 and 24,000 square feet, with an average home site being 9,437 square feet. The large amount of open space around each residential unit would provide opportunities for outside recreation and open space and would be supplemented by the availability of other on-site and nearby recreational resources. The Proposed Project includes a 13,000 square foot recreational area for a proposed swimming pool and spa, for use by Lake San Marcos Estates residents and guests only. In addition, through a contractual arrangement, project residents would have access to private recreational facilities owned and operated by the original developer of the Lake San Marcos Community. Relative to regional county recreational resources, the project applicant would be required to pay standard developer County Park and Recreation fees. Based upon the aforementioned recreational opportunities and impact fees, no significant park impacts are anticipated. No new park facilities would be constructed off site as a result of project implementation.

The Proposed Project would be serviced by the Vallecitos Water District (VWD) for potable water and sewer services. The Proposed Project would require installation of a pump station at the Meadowlark water reservoirs and 8- and 10-inch water pipelines connecting the reservoir supplies to the project site, as described in Chapter 1.0 and shown in Figure 1.1-9. VWD has indicated that there is adequate potable water capacity and supply in the Meadowlark reservoirs to serve the project site (correspondence with C. Brandstom, May 1998). No significant impact is anticipated. No additional facilities would be required or constructed, other than those addressed in this EIR.

The Proposed Project would require annexation into the Vallecitos Sewer Improvement Districts 1, 2 and 6 prior to site connection to VWD sewer services. The proposed sewerage system for the Lake San Marcos Estates project consists of a gravity flow system to the north, connecting with an existing VWD 8-inch gravity line located in Panorama Drive. The 8-inch line may be upsized by the project applicant as part of the annexation agreement, pending the results of a final capacity study for this gravity line. Any required upsizing would be solely to accommodate the Proposed Project or other planned development within the District. Excess capacity is not proposed or anticipated. If upsizing is required of the 8-inch line, impacts would be limited to utility improvements within Panorama Drive and would be short-term and not significant. A 25-foot sewer/emergency access easement is proposed between residential Units 99 and 100 providing the connection between on- and off-site sewer lines. Sewer generated at the project site would be treated at the Meadowlark Water Reclamation Facility, which has a current treatment capacity of 2.25 million gallons per day. Refer to Subchapter 2.2 regarding storm water drainage. No additional facilities would be constructed other than those identified and evaluated herein.

Dry utilities, including gas, electric and communications would be available to the project site, as noted in service letters submitted by the affected agencies (San Diego Gas & Electric, Pacific Bell and Daniel's CableVision). It should be noted that California recently has experienced electrical energy supply shortages which have been addressed at the State level; however, the impact this project would have on regional supply would be negligible. In addition, this project would be required to meet Section 81.401(n) of the Subdivision Ordinance which requires sufficient (i.e., 100 square feet) unobstructed access to sunlight around residences for purposes of harnessing solar energy. Extension of utilities would occur in existing, disturbed easements and utility corridors. New facilities would not be constructed off site and therefore no environmental impacts are expected.

The Proposed Project's future residents would generate household waste which would incrementally add to the regional demand for solid waste disposal facilities. On a project level, the solid waste generated by the proposed Lake San Marcos Estates residents would not exceed the capacity of landfills that accept solid waste in the northern San Diego County. Solid waste generated by the project site would be handled at the County of San Diego. Future residents of the development would participate in County of San Diego recycle programs in an effort to reduce the amount of landfill disposal in accordance with the State Solid Waste Reduction Act (Assembly Bill 939). No significant impacts to landfill capacity would result from the addition of 105 dwelling units. Construction phase activities would also generate some amounts of construction waste (e.g., concrete, nails and other building material wastes) which would require landfill disposal as a responsibility of the construction contractor. Wastes generated from the construction phase are not expected to result in a significant impact to local landfill capacities. No new facilities would be required and therefore no off-site impacts are anticipated as a result of project implementation.

6.2.8 Paleontological Resources

The project site is not located on geological formations exhibiting moderate to high potential for containing paleontological resources. The underlying geologic formation, Santiago Peak Volcanics, is considered to have a low potential for presence of resources (Paleontological Resources, County of San Diego, undated).

CHAPTER 7.0 - LIST OF REFERENCES

California Environmental Quality Act, CEQA Guidelines 1997.

City of San Marcos, San Marcos General Plan, Lake San Marcos Neighborhood Plan, undated.

City of San Marcos, San Marcos General Plan Circulation Element, Adopted April 8, 1993.

County of San Diego, Environmental Impact Report Format and Content Guidelines, February 1997.

Department of Planning and Land Use Draft Air Quality Analysis Format Guidelines, August 15, 2000.

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Public Facility Element, Adopted March 13, 1991, Amended June 10, 1992.

Zoning Ordinance.

Resource Protection Ordinance of San Diego County, October 10, 1993.

Déméré, Thomas A. and Stephen Walsh. Paleontological Resources, County of San Diego, undated.

San Diego Association of Governments, SANDAG Info Publication, San Diego Region Population and Housing Estimates, January 1, 2000.

Wiley-Interscience, New York, N.Y. Encyclopedia of Acoustics, 1997. Volume II, Chapter 89, pages 1083-1091.

CHAPTER 8.0 - LIST OF EIR PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

This Environmental Impact Report (EIR) was prepared under the direction of the County of San Diego Department of Planning and Land Use located at 5201 Ruffin Road, Suite B, San Diego California 92123. The following professional staff assisted the DPLU in the preparation of this EIR.

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LIST OF MITIGATION MEASURES AND ENVIRONMENTAL DESIGN CONSIDERATIONS

Comprehensive Listing of Mitigation Measures Proposed for the Project:

Mitigation for 2.1.3a Short-Term Construction-Related Erosion and Sedimentation Impacts:

The Project Applicant will be responsible for the implementation, installation and, where applicable, removal of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential home owner's association (HOA).

1. Temporary desilting basins will be employed at the western and southern storm drain outlets during project grading and construction. The exact design and location of these basins will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP. The described basins will be removed by the Project Applicant after completion of project construction (including landscaping).

2. Permanent energy dissipation devices (e.g., riprap aprons) will be installed prior to project grading at all three proposed storm drain outlet points. The exact design and location of these devices will be evaluated as part of the project NPDES General Construction Activity Storm Water Permit SWPPP.

3. Runoff will be directed away from manufactured slope faces through the use of devices such as temporary berms, hay bales or sandbags placed along the slope tops. Alternatively, the potential use of permanent brow ditches (or similar devices) along slope tops will be evaluated in the project NPDES General Construction Activity Storm Water Permit SWPPP. Such devices, if deemed appropriate in the SWPPP, would provide both short-term (construction) and long-term runoff control for manufactured slopes.

Mitigation for 2.2.3c Water Quality Impacts:

The Project Applicant will be responsible for the implementation and installation of all described mitigation measures, as well as related measures included as part of the project design or identified during permitting efforts. The long-term maintenance and operation of applicable facilities will be the responsibility of the project site residential homeowners' association (HOA).

1. Contaminant filtering devices shall be installed by the Project Applicant at appropriate storm drain inlets. The exact number, location and nature of these devices shall be determined by the project engineers as part of the project site drainage system design (and in conformance with NPDES municipal stormwater permit requirements). Specific filtering methods may include devices such as media filters, Fossil Filters™, Vortechs™ systems, and oil/water separators. The project drainage system design shall be submitted to the County for review and approval (pursuant to NPDES guidelines) prior to implementation. Long-term monitoring and maintenance of runoff filtering systems shall be the responsibility of the project site HOA. As part of this process, the HOA may elect to conduct regular water quality testing to assess the effectiveness of structural water quality measures. Based on the results of such testing, long-term requirements may potentially be modified to reduce or eliminate filtering devices, if warranted (i.e., if unfiltered runoff is of adequate quality). The ultimate determination of such long-term requirements would be made by the County and San Diego RWQCB, pursuant to NPDES municipal stormwater and urban runoff guidelines.

2. The Project Applicant shall incorporate infiltration areas or devices into the project design where necessary and to the maximum extent practicable. Specifically, this may include efforts such as the use of unpaved swales in common areas, and porous pavement in applicable locations. The project applicant shall minimize all directly-connected impervious surfaces and reduce the use of impervious surfaces in project design wherever feasible.

3. The project site HOA shall fund and implement a program for public education regarding urban contaminant generation. Specific elements of this program may include items such as: adoption and distribution (e.g., through newsletters) of HOA guidelines regarding proper use and disposal of toxic and hazardous materials (e.g., paints, pesticides, herbicides, fertilizers and detergents); sponsorship of toxic and hazardous material collection programs; and use of signs and/or storm drain stencils to provide warnings on illegal contaminant disposal.

4. The project site HOA shall fund and implement a program to minimize the generation of urban contaminants from common landscaped areas. Specific elements of this program shall include: eliminating irrigation runoff; avoiding or minimizing the use of chemical pesticides, herbicides and fertilizers; and recycling vegetation waste.

5. The project site HOA shall fund and implement a street sweeping program to maximize the removal of fine-grained particles. Specific elements of this program shall include the prohibition of on-street parking during cleaning hours, the use of low operating speeds (not exceeding 5 miles per hour) for street cleaning equipment, and proper scheduling of street sweeping activities (e.g., prior to commencement of the rainy season).

Mitigation for 2.3.4.a Sensitive Species Impacts

1. To prevent potential impacts to nesting raptors, a County–certified, qualified ornithologist, will perform a survey to be completed not more than one week prior to initiation of blasting, clearing and grading activities, and based on the survey, certify in writing to the County Department of Planning and Land Use that there are no nesting raptors on the project site. If the ornithologist's survey locates nesting raptors, it will certify in writing to the County that an area not less than 800 feet radius from the nest(s) has been flagged to identify a construction-free zone to avoid disturbance to nesting raptors.

Mitigation for 2.3.4.b Direct Habitat Impacts

1. The project would significantly impact coastal sage scrub habitat through direct loss of 0.3 acre. NCCP guidelines determine the quality of habitat present and the 4(d) Rule Mitigation Guidelines for the HLP process determine the appropriate mitigation ratio. Following these guidelines, the Proposed Project warrants a 2:1 mitigation ratio. A Biological Open Space Easement, dedicated to the County of San Diego, will be placed on all areas of native vegetation outside the grading impact zone. The Biological Open Space Easement will cover 13.7 acres of habitat that will provide more than the required 2:1 mitigation ratio required for coastal sage scrub impacts and will preserve native habitat and protect any potentially occurring species listed in Tables 2.3-2 and 2.3-3 in the Draft EIR.

Mitigation for 2.3.4.d Indirect Biological Resource Impacts

1. Water Quality

   During project construction, measures shall be implemented to control erosion, sedimentation, and pollution in accordance with the measures listed above for Impact 2.2.3d. The lack of wetlands or streambeds means no Clean Water Act 404 permits or Fish and Game Code 1603 Streambed Alteration Agreements are required for this proposed project.

2. Habitat Disturbances

   The Proposed Project shall include fencing between the development/remaining orchard and the Open Space Easement. Preserved habitat shall be posted with signs precluding access due to habitat sensitivity and prohibiting dumping. Residents shall be educated in access restrictions, control of domestic animals, prevention of irrigation run-off, and sensitivity of habitats on site within the Biological Open Space Easement.

3. Noise

   Prior to the start of grading, drilling and blasting activities, a certified biologist shall conduct a protocol survey within the native coastal sage scrub to determine if any nesting California gnatcatcher pairs are present. If nesting pairs are located within 500 feet of the proposed limits of grading (includes limits of drilling and blasting), one of the two following mitigation measures shall be implemented:

   - Construction activities (drilling, blasting or grading) shall be postponed until after the breeding season ends (breeding season is February 15 through August 15), or

   - Temporary noise barriers (earthen berms or solid fencing) shall be erected between the noise source and receiver to reduce the noise to a level that will not disturb nesting gnatcatchers (60 dB L_{eq}). Although it is possible to screen activities and meet the 60 dB L_{eq} standard, it is not possible to generalize a single berm requirement even for an at-grade assumption (i.e., without topographic variations). As noted in Appendix F, noise barrier heights would average 8½ feet. The location and height of the temporary barrier would depend upon the location of where breeding pairs of gnatcatchers are found and upon the distance between the construction noise source and the receiver (breeding pairs). The peak hourly noise level and required berm height to achieve the necessary mitigation are provided in Appendix F, page 9. As shown in Appendix F, the barrier heights vary for every source-receiver distance and for the type of equipment operating near the habitat. In addition, the barrier heights provided assume the noise-source and receiver are at equal grade, which is a worst-case analysis. As mentioned previously, the topography on-site varies significantly and avocado groves will be retained between the limits of grading and the native habitat, contributing to noise attenuation.

     Noise barrier materials would consist of either an earthen berm or plywood fencing, and would be located at the edge of the limits of grading for distances no greater than 200 to 300 linear feet.

4. Fugitive Dust

   Dust shall be controlled through the implementation of measures required by the County's grading regulations, including application of water on unpaved, unvegetated surfaces during construction activities.

Mitigation for 2.4.3a Construction Noise Impacts:

Because exact drill rig locations and barrier effectiveness is not known at present, the following mitigation measure is recommended to reduce short-term noise impacts:

1. Drilling operations in preparation for blasting within 260 feet of the property line of a residential property shall be shielded through physical interruption in the direct line of sight from the source to the receiver.

2. A qualified acoustician shall monitor noise levels at the residential property line most affected by construction operations (i.e., along the northern project site boundary both west and east of Camino del Arroyo Drive). When a daily noise "dose" has been accumulated sufficient to equal 75 dB(A) $L_{eq}(8)$, drilling or construction operations shall be terminated for that day.

Mitigation for 2.5.3d Landform Modification Impacts:

1. The proposed fill slope in the canyon shall be graded to simulate the natural topography.

2. Fill slope landscaping shall include a mix of native vegetation that conforms to the plant species found within the Biological Open Space Easement.

Conditions of Approval Required to Ensure Implementation of Design Features:

1. Standard measures are proposed during the grading and construction phase to reduce environmental effects and impacts to air quality, erosion and water quality. These environmental design considerations listed below are also included in a list in Chapter 1.0 Project Description. The environmental design measures proposed as part of the project description include the following activities:

   - Multiple applications of water during grading between dozer/scraper passes
   - Paving, chip sealing or chemical stabilization of internal roadways after completion of grading
   - Use of sweepers or water trucks to remove "track-out" at any point of public street access
   - Termination of grading if winds exceed 25 mph
   - Stabilization of dirt storage piles by chemical binders, tarps, fencing or other erosion control

2. In an effort to minimize the potential for visual impacts, the Proposed Project includes the following design features:

   - Avocado trees are proposed to be retained on slopes adjacent to house pads and as close as possible to the edges of the pads to provide shielding of the houses and to break up the flat contour of the building pad edges;

   - Homes are proposed to be set back a minimum of 15 feet from the edges of the pads so that the slopes and the viewing angles work together to minimize the degree to which the homes are visible from lower elevations; and

   - All manufactured slopes are proposed to be vegetated and irrigated.

3. A County certified archaeologist shall field check the ridgetops within the limits of grading following brushing and clearing and prior to grading activities. Should archaeological resources be discovered during monitoring, a grading monitoring and data recovery program should be implemented. This condition of approval shall include, but shall not be limited to, the following actions:

   - Prior to issuance of a grading permit, the applicant shall provide written verification to the Planning Director that a County certified archaeologist has been retained to implement the monitoring program. This verification shall be presented in a letter from the Project Archaeologist to the Director of Planning and Land Use. All persons involved in the monitoring program shall be approved by the Planning Director prior to any pre-construction meeting.

   - The County certified archaeologist shall attend the pre-grading meeting with the contractors to explain and coordinate the requirements of the monitoring program.

   - During the original cutting of previously undisturbed deposits, the archaeological monitor(s) shall be on site full-time to perform periodic inspections of the excavations. The frequency of inspections will depend on the rate of excavation, the materials excavated, and the presence and abundance of artifacts and features.

   - In the event that previously unidentified cultural resources are discovered, the archaeologist shall have the authority to divert or temporarily halt ground disturbance operations in the area of discovery to allow evaluation of potentially significant cultural resources. The archaeologist shall contact the County Archaeologist at the time of discovery. The archaeologist, in consultation with County Archaeologist, shall determine the significance of the discovered resources. The County Archaeologist must concur with the evaluation before construction activities will be allowed to resume in the affected area. Isolates and clearly non-significant deposits will be minimally documented in the field and the monitored grading can proceed. For significant cultural resources, a Research Design and Data Recovery Program to mitigate impacts shall be prepared by the consulting archaeologist and approved by the County Archaeologist, then carried out using professional archaeological methods. If any human bones are discovered, the County Coroner shall be contacted. In the event that the remains are to be of Native American origin, the Most Likely Descendent, as identified by the Native American Heritage Commission, shall be contacted in order to determine proper treatment and disposition of the remains.

     - Before construction activities are allowed to resume in the affected area, the artifacts shall be recovered and features recorded using professional archaeological methods, according to the Research Design and Data Recovery Program.

     - All cultural material collected during the grading monitoring program shall be processed and curated according to current professional repository standards. The collections and associated records shall be transferred, including title, to an appropriate curation facility within San Diego County, to be accompanied by payment of the fees necessary for permanent curation.

     - A report documenting the field and analysis results and interpreting the artifact and research data within the research context shall be completed and submitted to the satisfaction of the Director of Planning and Land Use prior to the issuance of any building permits. The report will include Department of Parks and Recreation Primary and Archaeological Site forms.

4. Although there are no significant indirect lighting impacts to biological resources, a condition of approval is recommended whereby residents will be informed through the HOA that exterior lighting within the residential development shall be of the lowest illumination allowed for human safety, and shall be selectively placed, shielded, and directed away from any on- or off-site habitats.